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The geography of incentives to run a federal budget deficit in Belgium

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Abstract:

Political parties in Belgium are split along Flemish-Francophone lines, and Flanders enjoys relatively less federal expenditures and pays relatively more federal taxes than Francophone Belgium. As the federal debt is serviced out of federal tax revenues, Flanders bears most of the cost of debt servicing, while on average having benefited the least from the deficit-funded expenditures. Those uneven net benefits from Belgian federal budget deficits –and the diverging incentives for federal budget deficits this disparity seems to create- may be an explanation of the large overall size of deficits and debt in Belgium since the 1970s. Hence, interregional fiscal transfers resulting from the federal debt may be important not just because of their distributional *consequences*, but even more because they may provide an *explanation* for the large Belgian federal deficits and debt burdens.

We test for these differing deficit incentives by investigating the difference between the effect of an increase in *net* formula-based transfers on Flemish resp. Francophone Belgian federal government parties' vote share. We find at first sight that an increase in net transfers causes Flemish governing parties to *lose* votes during the next federal election, while the effect is insignificant in Francophone Belgium as well as in Belgium taken as a whole. The negative Flemish effect may be suggestive of Flemish voters being aware that increases in formula-based net transfers to Flanders may go hand in hand with similar increases to Francophone Belgium, that these increases may increase the public debt, and that the latter is serviced mainly with federal taxes raised in Flanders.

However, when taking into account legislature-specific shocks *that differ between Flanders and Francophone Belgium*, the Flemish negative effect of transfers on votes mostly turns insignificant. Neither is there a consistently significantly positive effect of transfers on votes in Francophone Belgium, and also when investigated for Belgium as a whole the effect is insignificant.

In conclusion, Francophone Belgian (Flemish) voters do not seem to particularly reward (punish) extra net transfers with more (less) votes. Francophone Belgian voters seem to overestimate the future cost of extra transfers they will bear, while the opposite seems to hold for Flemish voters. Alternatively, Francophone Belgian parties may overestimate the rewards -in terms of voters' gratitude- of steering extra transfers to Francophone Belgium, while Flemish parties may correctly estimate the –lack of- punishment –in terms of voters' anger- of steering extra transfers to Flanders.

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1.Introduction

In what follows we will empirically investigate the possibly geographically divergent incentives of politicians to run a federal budget deficit in Belgium, which is suggested by our geographical attribution of the interest payments on the federal debt. Table 1 below shows differences between the interest bill on the Belgian federal debt that annually falls due according to *in which Belgian region this federal debt originated* and according to *in which Belgian region the federal tax revenue was generated to pay this interest bill* over the 1970-2002 period, as well as for the final year of this period. The 1970-2002 period is the period for which we found data that enabled us to allocate Belgian federal public expenditures and federal tax revenues regionally.

Table 1: Differences between annual interest bill on the federal debt *caused and paid,* and resulting annual fiscal transfers per Belgian region (in % of Belgian GDP) (1970-2002)

	Belgium	Flanders	Francophone Belgium
Average interest bill caused	7.8%	2.1%	5.6%
Interest bill caused (2002)	6.1%	-1.7%	7.8%
Average interest bill paid	7.8%	4.8%	3.0%
Interest bill paid (2002)	6.1%	3.9%	2.2%
Average fiscal transfers due to the interest bill	0.0%	**2.6%**	**-2.6%**
Fiscal transfers due to the interest bill (2002)	0.0%	**5.6%**	**-5.6%**
Average federal budget balance	**-7.3%**		
Average federal public debt	**102.5%**		

Source: Jennes 2014

Table 1 shows that Flanders on average has shouldered a considerably larger share of the interest bill (= "interest bill paid") than warranted by its share in the extra federal expenditures made possible by the consecutive federal budget deficits (= "interest bill caused") over our sample period. This difference has caused an average annual implicit fiscal transfer through the federal budget process from Flanders to Francophone Belgium of 2.6% of Belgian GDP. Moreover, this transfer has steadily increased over our sample period, until no less than 5.6% of Belgian GDP in 2002 –i.e. no less than 92% of the total federal interest bill in 2002[2]. This steady increase has mainly been caused by a number of federal budget consolidation efforts since the 1981 federal elections, efforts that have improved the implicit federal primary balance of Flanders more than the implicit federal primary balance of Francophone Belgium. (for more details, see Jennes 2014) More in particular, successive implicit federal primary surpluses of Flanders since 1981 contrast with continuing implicit federal primary deficits in Francophone Belgium. These successive Flemish implicit federal primary surpluses have rendered the interest bill caused by Flanders even *negative* from 1998 onwards according to our calculations (as shown in table 1 by the negative figure for Flanders in the 3rd row). I.e. from 1998 onwards Flanders implicitly *generated interest revenue* instead of causing an interest bill. The resulting

[2] It is sometimes argued that since Flanders is the richest region of Belgium, interest payments on the Belgian federal public debt would disproportionately benefit inhabitants of Flanders, holding Belgian federal public debt. However, we have not found any data on the distribution of Belgian federal bonds over individual inhabitants of Flanders. It could well be that only a minority of those inhabitants hold Belgian federal bonds. Moreover, those inhabitants would have looked for an as profitable investment should they not have invested in Belgian federal bonds.

increasing annual fiscal transfer from Flanders to Francophone Belgium may have provided Francophone Belgian politicians with an incentive to make the federal budget run a deficit, in contrast to Flemish politicians.

We will investigate the geography of budget deficit incentives in Belgium by estimating if the *net* effect of federal taxes paid and federal expenditures received on popularity of the federal government differs between Flanders and Francophone Belgium, as *net* taxes paid and expenditures received per geographical area measure this area's contribution to the federal budget balance[3]. In contrast to the existing political economy literature on debt, our investigation concerns an empirical test of (1) the central government's debt game (2) between different regions (3) represented within one and the same central government. Moreover, in contrast to the existing distributive politics literature, we hypothesise that the Belgian region that de facto pays most of the debt service burden, i.e. Flanders, *punishes the incumbent parties with less votes for steering transfers* to this region. As the transfers we investigate are formula-based, such punishment could be due to Flemish voters fearing an increase of transfers to Flanders not only going hand in hand with an increase of transfers to Francophone Belgium, but also with an increase in the public debt as a result of these increases.

Unfortunately, a geographical disaggregation of the *entire* Belgian federal budget (revenues + expenditures) does not exist, let alone over a sufficient number of years. However, in its annually updated "Regional accounts"[4], the Belgian central bank NBB provides for every year over the 1995-2011 period[5] a geographical disaggregation down to the level of the 43 Belgian "administrative arrondissements" (or districts)[6] with respect to following important federal revenue and expenditure categories: income taxes paid[7] (-), -mandatory- social security contributions paid (-), and social transfers received[8] (+).

The social transfers variable included in the "Regional accounts" comprise all major social transfer categories in Belgium: pensions, unemployment benefits, child allowances, work disability

[3] Of course we cannot estimate the possibly geographically differing impact of the *aggregate federal budget balance itself* on popularity of the federal government, because of course the aggregate federal budget balance does not vary between geographical areas of Belgium.

[4] http://www.nbb.be/doc/dq/n/dq3/NNR.pdf

[5] Note that the "Regional accounts" data cover a different period than the period on which our calculations resulting in table 1 are based. We regret the lack of overlap between these 2 periods, while maintaining that the finding in table 1 is a relevant motivation for our regression analysis below concerning the 1995-2011 period.

[6] In Belgium, the "arrondissement" or district level is a level which lost its policy meaning decades ago, as opposed to the regional and the community subcentral government levels. However, several of these districts were in effect federal *electoral* districts during part of our sample period, i.e. before the electoral districts merger of 2002. This meant that members of the federal House of Representatives could only collect votes in their district of official residence. Annex 1 shows a map of the 43 "arrondissements" (or districts) of Belgium.

[7] Over our sample period, a small part of the authority to levy income taxes was devolved to the 3 Belgian regions. Only the Flemish region made use of this authority, by cutting income taxes slightly for inhabitants of the Flemish region in the 2007-2009 period only. We assume that these tax cuts have a negligible influence on our regression results below.

[8] Only social transfers *in cash* are included in our data, excluding social transfers *in kind*, such as education and health care, for which the "Regional accounts" do not collect data.

allowances, allowances for the handicapped, and subsistence allowances[9]. The 3 transfers categories we consider are generally very important in OECD countries. E.g. in 2010, income taxes on average amounted to 8.4% of GDP in OECD countries, while social security contributions on average amounted to 10.1% of gross wage earnings and social expenditures on average amounted to 22.1% of GDP (see www.oecd.org). In Belgium social expenditures even amounted to 29.5% of GDP in 2010. These 3 transfer categories arguably constitute the core of the Belgian "welfare state", and can be argued to be visible tax and expenditure categories, as they constitute direct and sizeable transfers from and to individual citizens. We label the sum of these 3 important and geographically disaggregated fiscal categories "(net) transfers". Expressed by means of a simple formula:

$$(net)\ transfers_{it}\ (-)$$

$$= social\ transfers_{\ it}\ (+) + social\ security\ contributions_{it}\ (-) + income\ tax\ payments_{it}\ (-)$$

with *i* denoting a particular district and *t* denoting a particular year.

While most of the distributive politics literature investigates the political economy causes and effects of *discretionary* transfers, our transfers variable is *formula-based*, which is crucial to the research hypothesis we have formulated. Moreover, similar to the federal budget balance, our net transfers variable may be considered a balance of revenues and expenditures, and ceteris paribus they may be assumed to be –negatively- correlated with the overall federal budget balance: the more transfers citizens receive, the more negative the federal budget balance will be (ceteris paribus). Hence our net transfers variable may be considered as –however imperfectly- measuring a district's contribution to the federal budget balance. Unsurprisingly, over our sample period our transfers variable has been *negative* for every individual district and year, as it comprises the 2 major federal revenue categories, and only 1 major federal expenditure category[10].

However, graph 1 shows that transfers per capita are on average more negative for the (22) Flemish districts than for the (21) Francophone Belgian districts[11], which is evidently mainly due to the on average higher gross income per capita of Flemish districts (17,636 euros, versus 15,128 euros for Francophone Belgium). Transfers (in euros) to only 7 out of 22 Flemish districts (Diksmuide -2,308; Eeklo -3,090; Ieper -2,692; Oostende -2,810; Maaseik -3,040; Tongeren -3,021; Veurne -2,769) are less negative than the average (-3,120 euros per capita). Transfers to only 5 out of 21 Francophone Belgian districts (Arlon -3,696; Brussels -3,195; Namur -3,465; Nivelles -5,081; Waremme -3,868) are more negative than the average. Transfers to only 5 out of 22 Flemish districts (Diksmuide -2,308; Ieper -2,692; Oostende -2,810; Tongeren -3,021; Veurne -2,769) are less negative than the median (Maaseik -3,140 euros per capita). Transfers to only 5 out of 21 Francophone Belgian districts (Arlon

[9] The latter 2 subcategories are not formally part of the Belgian social security system.

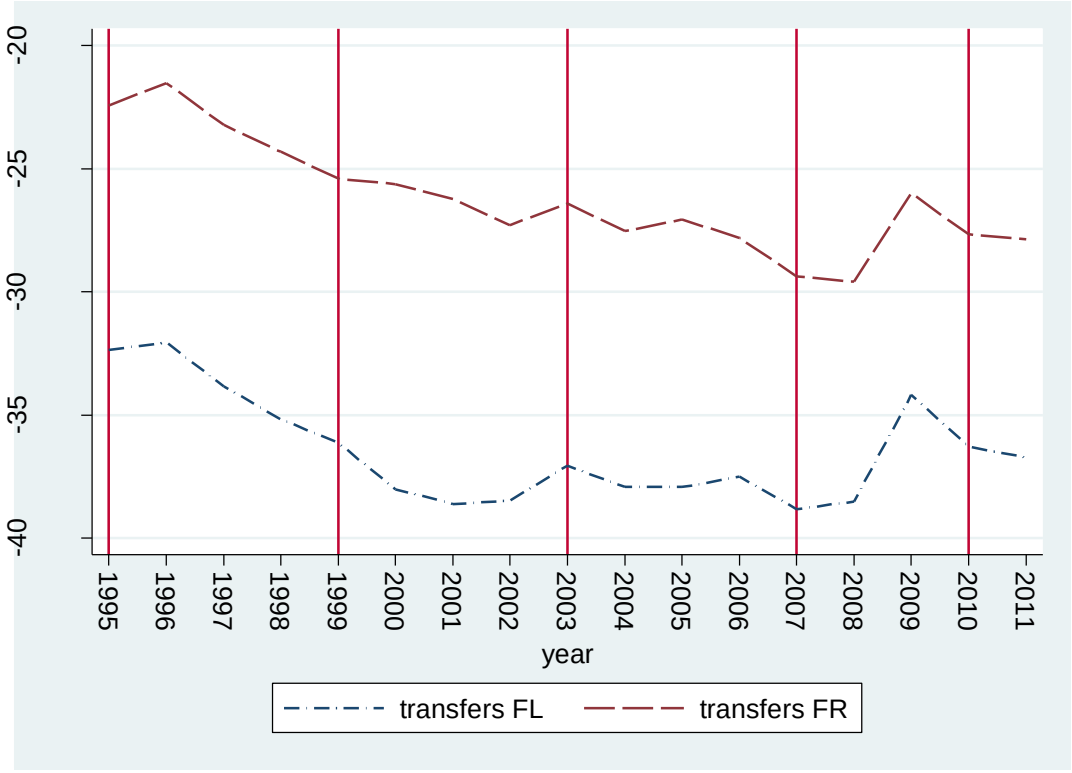
[10] Hence while transfers imply an amount *received by* citizens and *provided by* the government, their negative overall sign implies that our transfers variable captures a net transfer *paid to* the government.

[11] We consider all districts located within the Flemish region as Flemish districts and we consider all districts located within the Walloon region as Francophone Belgian districts. Because voters of the Brussels district overwhelmingly voted for Francophone Belgian parties over our sample period, we also consider the Brussels district as a Francophone Belgian district. E.g. in the 2007 federal elections the Flemish parties that were part of the next federal government obtained 3.78% of the total vote in the Brussels district, while the Francophone parties that were part of the federal government obtained 43.48% of the total vote.

-3,696; Brussels -3,195; Namur -3,465; Nivelles -5,081; Waremme -3,868) are more negative than the median.

Showing separate curves for Francophone Belgian and –Dutch-speaking- Flemish districts in graph 1 makes sense, basically because in Belgium no single party that obtained representation in the federal parliament over our sample period obtained votes both in Flanders and in Francophone Belgium[12]. While largely formula-based, such split representation may even affect policy with respect to fiscal transfers. One of the Francophone vice prime ministers in the 2010-2014 federal government -as quoted in Flemish newspapers- would have defended a more strict income tax treatment of private use of company cars by arguing that "there are more company cars in the Flemish province of Antwerp alone than in the entire Walloon region" (De Standaard 2014). A more important example is the finding of "Hoge Raad voor Financiën", a federal fiscal policy watchdog, that the major 2001 income tax cut –while worsening the federal budget balance- mainly benefited inhabitants of the Walloon region (HRF 2010).

Graph 1: Transfers per capita (in real 100 euros of 2011)



Note: bars indicate federal election years

A second striking feature of graph 1 is that for both regions, transfers have become more negative over our entire sample period, with the 2009 economic crisis as the major exception. However, we should not attach too much importance to this feature as this general decrease in transfers could merely be the result of economic growth, which unsurprisingly makes income tax revenue and social

[12] Exceptions are Flemish parties in the district of Brussels and Francophone Belgian parties in the district of Halle-Vilvoorde. Both exceptions are rather negligible in terms of vote share.

security contributions increase in real terms[13]. What is finally noteworthy from graph 1 is that Flemish and Francophone Belgian transfers broadly move in tandem, which is an illustration of the formula-based nature of our transfers variable.

In what follows, we will perform a regression analysis of the joint vote share per district of the political parties that are part of the federal government coalition on transfers per district[14]. As said, above, our hypothesis is that the impact of transfers on vote share will be less positive for Flemish districts than for Francophone Belgian districts. This would be because Flemish voters may suspect an increase in transfers to result into a more negative federal budget balance. In turn, this suspicion would be due to Flemish voters being aware of the decades' long weak track record of the Belgian federal government in terms of budget discipline. The bottom rows of table 1 show that the average federal budget deficit was no less than 7.3% of GDP over the 1970-2002 period. Successive deficits have resulted into a federal public debt of 106.1% of GDP in 2002. In 2011, this ratio still amounted to 96.0%. Ever since the 1980s until the end of our sample period, Belgium has been burdened with one of the highest public debt ratios among OECD countries. An additional assumption which our hypothesis is based on is that Flemish voters are aware that the interest payments to service a hence increased federal debt disproportionately weights on Flemish taxpayers[15].

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[13] Economic growth has probably also made social transfers increase in real terms over our sample period, but as said above, social transfers constitute the only expenditure category comprised in our transfers variable, while the latter comprises 2 revenue categories.

[14] Of course we prefer to benefit from the fact that we have transfers data available down to the level of the 43 districts, as e.g. merely analysing votes and transfers at the aggregate levels of Francophone Belgium and Flanders would provide us with far too little variation in view of deriving conclusions as to impact of transfers on votes.
This goes with the disadvantage that -since Belgian districts are mere product of history- they vary enormously in terms of population. Mean population of our 43 districts is 242,982 –with a standard deviation of no less than 221,059-, while the largest district –Bruxelles- on average counted 1,007,531 inhabitants over our sample period and the smallest district –Bastogne- on average counted 42,122 inhabitants over our sample period. Hence, our regression results below could be driven disproportionately by a number of small districts.
When we consider instead the administrative level right above the district level as the unit of observation, i.e. the provincial level, FD regression results below turn insignificant once adding the interaction of our legislature dummies with the Flanders dummy. (see below) This should not entirely surprise as the shift from the district to the provincial level makes our number of observations decrease from 215 to a mere 55, rendering moreover an IV regression analysis impossible.
But also when we do not weight our right hand side variables for population anymore –effectively giving more weight to the largest districts-, FD regression results below turn insignificant once we add the interaction of our legislature dummies with the Flanders dummy.
However, when we leave out those districts with an average population below 100,000, regression results are very similar to regression results over the full sample, including those after adding the interaction of our legislature dummies with the Flanders dummy. No less than 13 districts are characterised by an average population below 100,000, of which 4 Flemish (Diksmuide, Eeklo, Tielt, and Veurne) and 9 Francophone (Arlon, Ath, Bastogne, Marche, Mouscron, Neufchâteau, Philippeville, Virton, and Waremme). Leaving them out reduces our number of observations from 215 to 150.

[15] See e.g. Jennes (2012) for a calculation of the shares of the Belgian regions in federal tax revenue. We assume that Flemish voters assume this gap to persist in the future, when interest payments on the newly accumulated public debt will come due.
Compared to Francophone Belgian voters, Flemish voters may also more strongly pay heed to the possible damage of a large federal public debt to the Belgian *macro-economy*, as the private sector makes up a larger part of the Flemish economy than of the Francophone Belgian economy.

Last but not least, this reasoning assumes that Flemish voters are aware of the *formula-based* nature of our transfers category. Because by law the incidence of the 3 components of our (net) transfers variable largely[16] depends on ability to pay (income tax and social security contributions) resp. on needs (social transfers), Flemish voters may suspect an increase in transfers per capita to their district to go hand in hand with a -possibly even larger- increase in transfers per capita to an average Francophone district[17], as the latter is needier and less able to pay than the average Flemish district[18]. Moreover, Flemish voters may be aware of the "entitlement" nature of our transfers variable, i.e. they are not only formula-based, but –unlike say investment expenditures- increases in our transfers considered tend to have fiscal consequences *for many years to come*.

As a result of all the above, voters of a Flemish district may fear the interest burden consequences of their –current and future- share of transfers received, but they may fear even more the interest burden consequences of the Francophone –current and future- share[19]. Therefore they may "punish" the Flemish parties that are part of the federal government at the next elections, for presumably having "given in" to the Francophone Belgian government parties' pressure to increase –formula-based- transfers, or for presumably having failed to foresee that an increase in transfers per capita to Flemish districts would lead to a -possibly at least as large- increase in transfers per capita to Francophone Belgian districts[20]. We are aware that our research hypothesis spelled out above is rather ambitious in comparison to the existing literature that hypothesises a positive effect of gross grants on government popularity (see below). Our hypothesis assumes a more rational, informed and forward looking voter than the existing literature, which implicitly assumes that the average voter mainly cares about *gross* transfers to his district[21].

In what follows, we will first briefly overview the related literature. Next, we will discuss the data in more detail. Thirdly, we will outline our empirical strategy, before moving on to a presentation and a discussion of the regression results. We will end with a conclusion.

[16] Jennes and Persyn (2014) demonstrate that the transfers category we use as our independent variable of interest is to some extent discretionarily determined however.

[17] The size of transfers to his/her own district seems to be the only plausible indicator of transfers to Francophone Belgian districts available to the average Flemish voter, as we believe that the average voter does not have any knowledge of statistical sources such as the "Regional accounts", which besides is one of the only publicly available sources of geographically disaggregated data on public expenditures and revenues in Belgium.

[18] In contrast, it is the essence of the *discretionary* transfers investigated in most of the empirical distributive politics literature, that more transfers to one geographical area do *not* lead to more transfers to another geographical area, even on the contrary. The effect of discretionary transfers on government popularity could hence be rather different from the effect of formula-based transfers on government popularity.

[19] Alternatively stated, a Flemish district may fear the interest burden consequences of the share of transfers received by districts that are *poorer* than their own one *in general*, but these poorer districts are overwhelmingly concentrated in Francophone Belgium. (see also graph 1)

[20] Alternatively to taking the point of view of Flemish voters, our research hypothesis could as well have been spelt out taking the point of view of Francophone Belgian voters. Of course such an alternative hypothesis would not have changed the interpretation of our regression results below.

[21] Our hypothesis reminds of the well-known hypothesis of Barro (1974) that consumers save in anticipation of a tax increase to follow the build-up of government debt. This so-called Ricardian equivalence theorem however has not been fully validated empirically.

2.Literature review

As said above, to our knowledge (1) the central government's debt game (2) between different regions (3) represented within one and the same central government has never been tested empirically. Moreover, to our knowledge, all theoretical and empirical studies thus far on the political economy of central government debt took debt/deficits as the *dependent* variable. (see e.g. Alesina and Tabellini 1992, Alesina and Perotti 1994, Persson and Tabellini 2000, Roubini and Sachs 1989, de Haan and Sturm 1997, Volkerink and de Haan 2001, and Huber e.a. 2003) In contrast, we will include a debt/deficit component into our *independent* variable of interest. (see below) As stated already above, we will test if Belgian regions have different incentives to make the central government run a deficit by empirically verifying if net fiscal transfers are appreciated differently by voters from the 2 major Belgian language communities. These language communities are also different *political* communities, each represented by a *different* set of political parties within the federal government and each having an effective veto power over central government policy. We will verify differing voters' appreciation by regressing the vote share of the governing coalition on previous transfers to Belgian districts. Therefore, our investigation is rather related to the extensive empirical political economics literature on "pork barrel", investigating if distributive politics practised by the incumbent party (parties) buys votes during the next elections[22].

Veiga and Veiga (2013) find that election year increases in transfers by the central government to Portuguese municipalities secure additional votes in favour of the party in power at the central level. Stratmann (2013) demonstrates that earmarks voted by US Congress in favour of particular electoral districts buy more votes in these districts. A more recent literature makes use of a Regression Discontinuity Design (RDD) –which identifies the effect of transfers on votes by focussing on electoral districts in which an election was barely won or barely lost- to assess if extra transfers buy more votes: it first investigates if having gained power leads to more transfers to districts that have voted in favour of the incumbent, and it next investigates if the incumbent wins extra votes during the next elections thanks to these extra transfers. Brollo and Nannicini (2012) for Brazil, Bracco e.a. (2012) for Italy, Curto-Grau e.a. (2012) for Spain, and Migueis (2012) for Portugal all find that extra transfers buy extra votes in favour of the incumbent party (parties) during the next elections, either at the central, at the local or at both levels.

What makes our study stand out from the "pork barrel" literature is (1) that our transfers variable is a *net* transfers variable, (2) that we will use it as an indicator to citizens for *debt accumulation*, since an increase in net transfers to citizens ceteris paribus means an increase in debt, and that (3) we would expect the Belgian region that de facto pays most of the debt service burden, i.e. Flanders, to reward the incumbent parties *to a lesser extent* with extra votes for steering transfers to this region.

[22] At least as vast is the related literature on the reverse effect, i.e. investigating if incumbent governments steer extra transfers to particular districts precisely in view of obtaining extra votes, as well as the related literature if *incumbency as such* buys extra votes, i.e. investigating if being in power leads to remaining in power. For examples of the former literature, see Dahlberg and Johansson (2002) for Sweden and Knight (2008) for the US. For examples of the latter literature, see Lee (2001) and Ansolabehere and Snyder (2002) on the US.

3.Data

As said already, graph 1 above summarises the evolution of our *independent* variable of interest over time and between Flanders and Francophone Belgium (in real 100 euros per capita). The evolution is remarkably parallel for Flanders and Francophone Belgium, and the difference in transfers per capita between Flanders and Francophone Belgium remains relatively stable over our sample period. However, the standard deviation of transfers to Flemish districts (880 euros per capita) is smaller than the standard deviation of transfers to Francophone Belgian districts (1016 euros per capita), despite the average transfers amount of Flemish districts (-3645 euros per capita) being considerably more negative than the average transfers amount for Francophone Belgian districts (-2619 euros per capita). Vertical bars mark federal election years in graphs 1 and following. The 1st full legislature of our sample period (1995-99) is characterised both for Flanders and Francophone Belgium by an overall steep decrease in transfers received. This is because the then federal government had embarked upon a program of strong budget deficit reduction in view of being allowed into the Euro currency zone. Another remarkable legislature is the 2007-10 legislature[23]: the sudden outbreak of the 2009 economic crisis resulted into an equally sudden surge in net fiscal transfers received.

Graph 2 shows the evolution of our *dependent* variable "difference in government vote share" over time and between Flemish and Francophone Belgian districts[24]. However, we cannot simply calculate our dependent variable as the difference between total votes obtained per district by the incumbent federal government coalition and total votes obtained per district by its predecessor. This would be like comparing apples and oranges, as most federal elections over our sample period resulted into a *change in the composition* of the federal government coalition[25]. Therefore we have constructed our dependent variable as the difference between the joint vote share (per district) obtained by the parties that were part of the governing coalition during federal elections t and the joint vote share (per district) obtained by *those same parties* during federal elections t-1, *when one or more of these parties may not have been part of the outgoing governing coalition*. Our dependent variable hence measures the joint increase/decrease in popularity of governing parties after having governed

[23] This legislature was the only one over our sample period that did not last its full 4 years, as the then government was brought down in 2010 by an institutional conflict between Flemish and Francophone Belgian coalition parties.

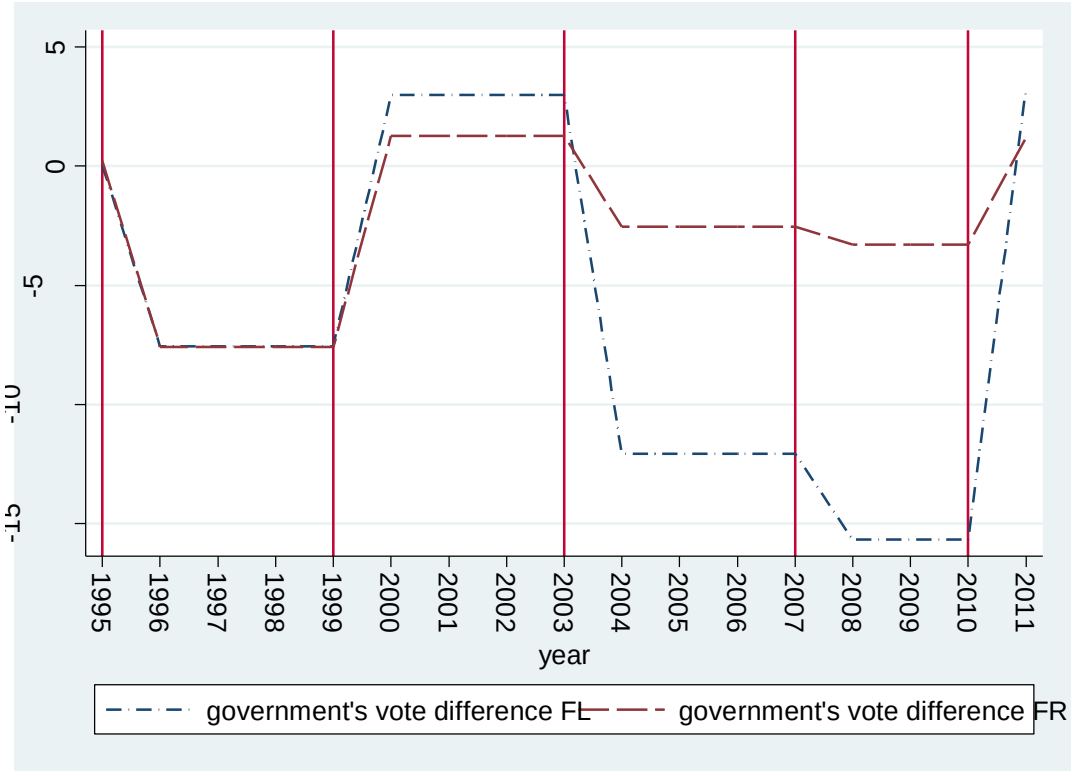
[24] Data on votes were kindly provided by Jo Buelens and Kris Deschouwer (VUB). Additional data on votes was obtained from a website of the Federal Ministry of the Interior:
http://www.ibzdgip.fgov.be/result/nl/main.html
In contrast to Belgian practice of allocating parliamentary seats to parties, we have calculated vote shares as the ratio of votes obtained by a particular party to *total eligible voters*, i.e. including voters who cast non-valid votes, who cast "blank" votes, and who did not cast their vote (despite voting being mandatory in Belgium). The Belgian real world allocation of parliamentary seats disregards non-valid votes, "blank" votes, and votes not cast, although these votes may well be an expression of voters' disapproval of the governing parties. We calculate vote shares somewhat differently from the Belgian real world allocation of parliamentary seats because we will use non-valid votes, "blank" votes, and votes not cast to construct an alternative dependent variable later on. Our different calculation decreases the size of our dependent variable somewhat, both in levels and in differences, compared to standard Belgian practice, as non-valid votes, "blank" votes, and votes not cast taken together on average amounted to 20.4% of the total eligible vote over our sample period (17.5% for Flanders and 23.5% for Francophone Belgium).

[25] Such a change implied a change in the identity of the governing parties, a change in their number, and/or a change in both.

during one federal legislature[26]. As our dependent variable is hence expressed as a difference[27], we will also express our independent variables in differences, although our independent variable of interest is expressed in levels in graph 1.

Because we will test in our regression analysis below if transfers in legislature t affect the result of the election at the end of *that same legislature t*, we have allocated in graph 2 the average vote share difference for Flemish resp. Francophone Belgian districts between 2 federal elections to *every single year* of the legislature concerned. Such "retroactive" allocation of vote share differences should reflect the possibility that transfers occurring *in any year* of a particular legislature may affect voting behaviour taking place *at the end* of that legislature. However, the way we present a particular vote share difference in graph 2 –i.e. as a horizontal line spanning an entire legislature- may give the wrong impression that government parties already knew their election result before the end of the legislature.

Graph 2: Difference in vote share (%points) obtained by the governing coalition between federal elections



Note: bars indicate federal election years

Source: Jo Buelens and Kris Deschouwer (VUB); http://www.ibzdgip.fgov.be/result/nl/main.html (Federal Ministry of the Interior); own calculations.

[26] We of course cannot and should not take into account the –possibly non-negligible- effect of a governing coalition governing for a 2nd legislature in a row –like e.g. during the 2003-07 legislature- on government popularity (see also Stratmann 2013), as there is obviously no variation over our 43 districts with respect to time in office of the federal government coalition.

[27] For Flanders, graph 2 shows the average vote difference for all 22 Flemish districts. For Francophone Belgium, graph 2 shows the average vote difference for all 21 Francophone Belgian districts.

Graph 2 shows that most incumbent federal governments over our sample period see their vote share decrease at the end of the legislature during which they governed, as both the curves for Flanders and for Francophone Belgium are below the 0% line for most years of our sample period[28]. E.g. during the 1999 elections the parties governing between 1995 and 1999 saw their joint vote share decrease by about 7.5%points[29]. In contrast, the 1999-2003 government as well as the 2010-2014 government saw their vote shares increase, although obviously by considerably less percentage points than the 7.5%points decrease suffered by the 1995-1999 government[30]. Most remarkable from graph 2 is the divergence in vote difference between Flanders and Francophone Belgium over our sample period. More in particular, the 2 legislatures between 2003 and 2010 are characterised by a large loss of vote share for Flemish governing parties, while the Francophone Belgian vote losses were much smaller. As a result, the total average as well as the total standard deviation of the Flemish government parties' votes difference (-5.26 resp. 7.35%points) are much larger than the total average and the total standard deviation of the Francophone Belgian government parties' votes difference (-1.96 resp. 3.94%points)[31]. Participation to a Belgian federal government seems much more risky for Flemish parties than for Francophone Belgian parties. Also, the Flemish evolution from a loss of vote share to a gain in vote share between the 2007-10 and the 2010-14 legislatures is less remarkable than it seems from graph 2, as 2 of the 3 Flemish parties governing between 2010 and 2014 already governed during the 2007-10 period and saw their vote share –slightly- increase in 2014 *from a historically very low starting point* in 2010[32].

As shown by graph 2, our sample period only comprises 5 federal elections and 6 legislatures, which will somewhat constrain our empirical analysis below. As also shown by graph 2, election years themselves are assigned vote differences concerning the *previous* legislature, although elections always took place as early as in May or June over our sample period. Such assignment takes into account the possibility of a political business cycle, according to which governing political parties would concentrate transfers right before a federal election to try and increase their vote share during that election.

[28] Again, showing separate curves for Flemish and Francophone Belgian districts in graph 2 makes sense as in Belgium no single party that obtained representation in the federal parliament over our sample period obtained votes both in Flanders and in Francophone Belgium, with the districts of Brussels and of Halle-Vilvoorde as exceptions.

[29] The mostly negative average vote differences stand somewhat in contrast to the rather extensive literature on the *positive* effect of incumbency on vote share and on being re-elected to office. (see e.g. for the US Lee 2001, and Ansolabehere and Snyder 2002)

[30] Only one year of the 1991-1995 legislature and only one year of the 2010-14 legislature have been included into our sample, as we were only able to collect transfers data from 1995 onwards and until and including the year 2011.

[31] These "different differences" may partly explain why in a number of cases we will find a statistically significant association between difference in transfers and government parties' vote difference for Flanders, but not for Francophone Belgium. (see below)

[32] With respect to the 1995 federal elections, the vote share difference with the previous elections –the 1991 elections- was of course not zero, in contrast to what graph 2 suggests. Graph 2 shows a zero for the 1991-1995 legislature because we simply do not consider the 1995 vote share difference, in turn because we only have transfers data at our availability from 1995 onwards. Because our regression analysis will be in first differences (see below), it will drop the year 1995.

4.Empirical strategy: first differences (FD) and instrumental variables (IV)

Our regression equation estimated in the regression tables below can be summarised as follows:

$$D.government's\ vote\ share_{it}$$

$$= \propto_1\ D.(net)\ transfers\ per\ capita_{it} + \propto_2\ D.(net)\ transfers\ per\ capita_{it} * FL$$

$$+ \propto_3 D.X_{it} + \propto_t + \varepsilon_{it}$$

With FL a dummy variable taking the value of 1 in case of a Flemish district, with X_{it} a set of demographic, economic and political control variables, and with $\propto_t$ a legislature fixed effect.

The legislature fixed effect $\propto_t$ controls for unobserved legislature-specific shocks that may be correlated both with transfers and government popularity[33]. It ensures i.a. that our coefficients of interest $\propto_1$ and $\propto_2$ measure the association between transfers and government popularity after having filtered out *country wide but legislature-specific* shocks. An example of such a shock are "tide" effects in party popularity, such as a sudden country-wide surge in the popularity of a protest party[34].

The combination of the first difference (FD) transformator D. with the use of legislature dummies in our above regression equation makes that identification of the association between the government's vote share and transfers is only based on changes in both variables that *simultaneously differ over time and between districts*.

As our variables are expressed in differences, district fixed effects are eliminated[35]. The FL dummy itself is not included as a separate regressor, as its value does not change over time. It would therefore also be eliminated by the FD transformation.

In a next step, we will aim at making possible a causal interpretation of the association between the government's vote share and transfers by using IV estimation[36].

Regression results for our empirical strategy are shown in a stepwise way in the tables below.

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[33] In this respect, popular Flemish media hold the view that "every Belgian election holds its surprise".

[34] Or a sudden country-wide surge in the popularity of a *non*-protest party.
See e.g. Allers and Merkus 2013, for the "tide effect" of national party preferences on municipal election results in the Netherlands.
Additionally including a *trend* variable –next to a set of *legislature dummies*- does not appear to affect our regression results. In contrast to legislature dummies, a legislature trend variable assumes the passing of time to be *smoothly* related to our dependent variable. This seems rather less probable given the *political* nature of our dependent variable, and given the fact that our dependent variable is expressed in differences. Including a trend variable –though "asking less" from our limited data set- would thus be less general than including a set of legislature dummies.

[35] Moreover, because of the *need* to express our dependent variable as the *difference* between the joint vote share of governing parties during the next election and their joint vote share during the previous elections, a fixed effects within regression strategy would not be feasible.

[36] A method to isolate random changes in our independent variable of interest that would be preferable to IV estimation would be a Regression Discontinuity Design (RDD), but we failed to identify discontinuities in transfers between districts over our sample period.

5.Results of the regression analysis

5.1.First differences (FD) regression results

5.1.1.Regression results *without* legislature*FL dummies added as extra controls

Table 2 shows the results of a simple FD regression of the government's vote share on transfers. All variables are *means* taken per district and legislature[37]. For this reason, we remain with only 215 observations (= 5 legislatures * 43 districts), out of an original total of 731 observations (= 17 years * 43 districts). 1 legislature –the 1991-1995 one- is lost because of the first difference transformation.

While column (1) –at first sight surprisingly- shows a significantly *negative* association between transfers and votes, column (2) shows that this association becomes insignificant once a number of demographic and economic controls that may both affect transfers and government popularity are included: the shares of over 60 years' old, under 18 years' old, and unemployed, as well as gross income per capita. The shares of over 60 years' old and of under 18 years' old are meant to capture the possibly differing popularity of governing parties across age groups, age groups which are also treated differently in terms of transfers. In contrast, unemployment share and gross income per capita are meant to capture i.a. the possibly geographically heterogeneous impact of the economic cycle on the government's popularity: transfers may –indirectly- affect government popularity

[37] We opted not to exploit the fact that we have *annual* transfers data at our disposal, because federal elections of course are not held annually.
Because we have at our disposal only one year of transfers data concerning the 1991-1995 legislature –i.e. 1995 transfers- and only one year of transfers data of the 2010-14 legislature –i.e. 2011 transfers-, our regression results could be biased in case transfers in these 2 years would not be representative for average transfers over the *entire* legislature concerned. 1995 may be unrepresentative because it is an election year. 2011 may be representative as in 2011 a caretaker federal government –in the shape of the outgoing federal government- was in place due to the most protracted government negotiations in Belgian history then taking place (from June 2010 until December 2011).
However, regression results below are similar when alternatingly dropping the years 1995 and 2011 from our sample period, despite the considerable loss of observations –one entire legislature- involved and except for the regression specifications including the lagged dependent variable (LDV). The latter is understandable, as simultaneously including the LDV and dropping either the 1991-1995 legislature or the 2010-14 legislature reduces the number of observations to only 86 (= 2*43).
Another way in which we verified the sensitivity of our choice to consider simple *means* of transfers per legislature, is by explicitly taking into account the possibility of a political business cycle. To this effect, we calculated mean transfers per legislature by only taking the mean of transfers during the *final 2 calendar years* of each legislature. As said above, federal elections always took place in May or June over our sample period. The exception to our way to calculate transfers when accounting for a political business cycle is the 2007-2010 legislature. Because the 2010 elections were unexpected, as they were the consequence of the fall of the federal government, and as only 3 years of the legislature concerned had elapsed at that time, we "calculated" mean transfers over the 2007-2010 legislature as transfers in the *year 2010 only*.
Regression results are broadly similar when explicitly taking into account the possibility of a political business cycle, suggesting that such a cycle was indeed at play over our sample period. However, as 2011 is the only year of the 2010-2014 legislature for which we have transfers data, we need to drop that legislature from our observations in view of checking for a political business cycle. The latter reduces our –from the start already limited- number of observations even more. An additional disadvantage of the strategy taking into account the possible occurence of a political business cycle is that by dropping 2011 we are left with observations for crisis-related temporary unemployment benefits concerning only 1 legislature (the 2007-2010 legislature). The latter seems to undermine the validity of our "crisis-related temporary unemployment benefits" instrument.

negatively, i.e. through an increase in the number of unemployed or –more generally- through a decrease in gross income, both of which may be distributed unequally over Belgian districts[38].

Table 2: FD regression of the government's vote share on transfers

	(1) D.govt vote	(2) D.govt vote	(3) D.govt vote
D.over 60		-4.090***	-4.324***
		(1.208)	(1.056)
D.unemployed		0.754	2.021**
		(0.736)	(0.768)
D.under 18		-4.312**	-3.408*
		(1.817)	(1.811)
D.gross income		-0.0232	-0.157
		(0.175)	(0.137)
D.ministers		-0.218	-0.517
		(0.667)	(0.509)
D.transfers	**-0.417****	**-0.258**	**-0.00492**
	(0.187)	**(0.273)**	**(0.155)**
D.transfers*FL			**-1.565*****
			(0.298)
N	215	215	215

Robust standard errors clustered at the district level in parentheses; legislature dummies included.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Additionally, a *political* control that may both affect transfers and government popularity is included, measuring the number of federal ministers –weighted by a district's population share- in whose electoral district a particular district is situated. Indeed, Jennes and Persyn (2014) show that a Belgian federal minister manages to increase those same formula-based net transfers that we use as the independent variable of interest, to his/her electoral district[39].

A priori, the sign of these controls could be positive or negative[40], except for the ministers variable, which is expected to show a positive coefficient. Surprisingly the minister variable however appears

[38] By including the shares of unemployed, over 60 years' old and under 18 years' old as control variables, pure changes in demography and in the economic cycle are filtered out of the transfers variable. Therefore from column (2) onwards the transfers variable only measures changes in the *individual benefit amounts* themselves received by the unemployed, the over 60 years' old and the under 18 years' old, rather than the changes in the *number* of unemployment benefits, retirement benefits and child allowances.

[39] An alternative for this political variable may have been the number of federal members of parliament weighted by population. However the executive is considered more powerful in Belgium than the legislative.

[40] At first sight it is surprising that the coefficient on the share of unemployed is positive, and even significantly positive in column (3). It could be interpreted as unemployed who do not blame the government for their unemployment, but instead vote for one of the government parties in the hope of them increasing unemployment benefits, as over our entire sample period, federal governments consisted of at least 1 left or centre left party per language group. Alternatively, the positive sign could be interpreted as a relative disregard of the economy –with an increase in unemployment as a consequence- by a federal government once this government becomes more popular.

to be negatively associated with government popularity, though this association is statistically insignificant[41].

As such, column (2) already presents a remarkable result from the perspective of the existing literature on distributive politics: in Belgium taken as a whole an increase in transfers does not seem to be associated with an increase in government popularity, in contrast to the existing literature.

In column (3) we additionally interact the transfers variable with a dummy taking the value of 1 for Flemish districts. The resulting interaction variable is our actual major independent variable of interest as it measures the *difference* in association between transfers received and governing coalition's vote share between the average Francophone Belgian and the average Flemish district. As our transfers variable is expressed in 100 euros per capita, the coefficient on the interacted variable in column (3) is to be interpreted as follows: while there does not appear any association between transfers received and vote share obtained in Francophone Belgium, Flemish coalition parties' joint vote share *decreases* with no less than 1.6%point[42] for every *increase* of per capita transfers of 100 euros. As the average within standard deviation of transfers per Flemish district over our 6 legislatures is 239 euros per capita, the typical variation in government vote share due to variations in transfers –expressed in 100 euros per capita- over time equals about -3.7%points (-1.6%point times 2.39), with a p value of 0.000.

This result is surprising, as we had expected -on the basis of table 1 above and on the basis of the abovementioned distributive politics literature on the positive effects of transfers on incumbency- a negative coefficient for the interacted transfers coefficient to go hand in hand with a significantly *positive* non-interacted transfers coefficient. A statistically significant interacted coefficient would then have provided tentative support to our hypothesis. Otherwise stated, it is not so much the significantly negative interaction coefficient that surprises[43], but rather the insignificant and small non-interacted coefficient.

One could argue that it would be the fact that a district's transfers are *below the mean* (or below the median) that is associated with a lower share of the votes of government parties, rather than the fact that a district is *situated in Flanders*. I.e. in those few Francophone Belgian districts that are characterised by transfers that are below the mean (or below the median), transfers could well be as negatively associated with the government's vote share as in Flanders. However, when we replace the FL dummy with a dummy "below mean" (or with a dummy "below median") taking the value of 1 in all districts –Flemish or Francophone Belgian- that are characterised by transfers that are below the mean (or below the median), the association becomes smaller and less significant, with a coefficient of only -0.548 and a p value of 0.12 (and when replacing the FL dummy with the "below median" dummy: a coefficient of only -0.811 and a p value of 0.02). The association becomes even insignificant when we simply replace the FL dummy with the continuous variable gross income,

[41] Again, this result runs counter to the rather extensive literature on the positive effect of incumbency on vote share and on being re-elected to office. (see e.g. for the US Lee 2001, and Ansolabehere and Snyder 2002)
[42] This decrease would be somewhat larger if we had not measured the government's vote share in relation to total *eligible* votes but to total votes *validly cast*.
[43] As the correlation between our transfers variable of interest and gross income is strong (-0.5), one may at first sight worry about multicollinearity. However as the coefficient on our variable of interest is significant, such a worry does not seem justified. Moreover, the coefficient of the interacted variable remains as significantly negative and of the same size when omitting gross income as a control.

based on the hypothesis that extra transfers would in particular be associated with less votes for the government in cases in which also gross income increases.

The fact that in no Flemish arrondissement voters are able to vote for (or against) Francophone Belgian government parties, and vice versa[44], as well as the fact that Flanders and Francophone Belgium do not share any language nor media, constitute additional arguments to distinguish between Flemish and Francophone Belgian districts, instead of between *relatively speaking* "transfers receiving" and "transfers providing" districts, or between districts that see their gross income decrease and districts that see their gross income increase. Spolaore (2008) demonstrates that richer regions are reluctant to redistribute income to poorer regions within the same country, in particular if these regions are culturally heterogeneous.

We have also re-constructed our independent variable of interest so that it becomes a better measure of the federal government's budget deficit. To this effect, we have weighted the transfers variable with the federal budget balance, assuming that voters may react more favourably to transfers received in years in which the budget deficit is low compared to years in which the budget deficit is higher. Again, this may be the case because voters –in particular Flemish voters- may fear a deficit increase to result into an increased interest bill, to be financed with higher taxes in the future. Moreover, over our entire sample period, the federal budget balance was to some extent a political issue, also given the chronically large federal budget deficits of the past decades and the large federal debt that has resulted from these. By adding an extra interaction with the federal deficit to our variable of interest, more importance is attached to transfers in years with a worse budget balance.

However, as a result (not shown), the size of our coefficient of interest decreases compared to column (3), while we had expected it to increase[45]. Perhaps this result means that citizens are less aware of the *overall* federal fiscal situation than of transfers to their district *in particular*. Indeed, transfers show up "inside the wallet" of voters in the same year as the year to which they are allocated in the "Regional accounts" statistics of the central bank, but the federal fiscal balance becomes known to voters –sometimes much- later –if at all- than the year to which it is "allocated" in the "Government accounts" statistics of the central bank[46]. Or perhaps this result means that Flemish voters would be averse to redistribution towards Francophone Belgium *even when the budget would be balanced*, rather than averse to redistribution in the shape of future interest payments. In particular, Flemish voters may fear that such a redistribution would be funded with less federal expenditures spent in or more taxes raised from Flanders that are *not* included in our independent formula-based net transfers variable (such as federal investment expenditures or VAT revenue).

[44] As stated above: over our sample period with the exceptions of Brussels and Halle-Vilvoorde.
[45] The reduced size of the association between government popularity and transfers when weighting transfers for the size of the deficit remains when lagging the deficit variable with 1 period. A lag seems justified as voters are aware of the size of the deficit of a particular fiscal year at best during the next year.
[46] A notorious case in point is the sudden and sizeable budget deficit of 2005. The then government had to revise its original accounting for the 2005 budget balance considerably downwardly after the European Commission obliged the government to include its takeover of debt from the public railways in 2005 into the government budget. The government disputed this decision of the European Commission in court, but –as it appeared years later- to no avail.

5.1.2.Regression results with legislature*FL dummies added as extra controls

However the regression results reported in table 2 change considerably once we add as extra controls *the interaction of the legislature dummies with the FL dummy*[47]. Hence next to interacting our variable of interest with the FL dummy, we also interact our legislature dummies with the FL dummy. Such an addition seems warranted[48], because the unobserved legislature-specific shocks for which the legislature fixed effects control may well differ between Flanders and Francophone Belgium. This is because –at least over our sample period- these 2 language communities were not only lacking a common language, but also common media and political parties, and because the constitution guarantees both language communities a fixed share of cabinet ministers regardless of the election result. These features lead some observers to talk about "2 separate democracies in one country" and about "2 separate elections taking place on federal election day".

In Belgium, a legislature-specific and transfer-related shake-up of the party landscape[49] by the surge of a protest party in the opinion polls or a transfer-related outbreak of a political scandal in the run-up to a particular federal election[50] in *one* of the 2 language communities may hardly cause ripples in the *other* language community. An example –though not clearly related to the formula-based transfers under study- was the diverging behaviour of both Green parties by the end of the single legislature -1999-2003- in which they were part of the governing coalition. The leading minister of the Flemish Green party resigned (and was replaced by another member of the Flemish Green party) in August 2002 after the government had approved an arms export deal with Nepal, while no minister of the Francophone Green party resigned (the arms were produced by a factory located in Francophone Belgium). In contrast, all ministers of the Francophone Greens resigned in May 2003 after the government had approved new flight routes over the -mainly Francophone- city of Brussels for airplanes departing from or bound for Belgium's main airport, while no minister of the Flemish Greens resigned.

Another example of heterogeneity between Flanders and Francophone Belgium at the federal level over our sample period is that the *composition* of the federal government was "asymmetrical" during the 1999-2003 and 2007-2010 legislatures: during the former it included the party VU at the Flemish side, and therefore one more party (4) at the Flemish side than at the Francophone Belgian side (3); during the latter it did not include the Flemish socialists while it did include the Francophone Belgian socialists, resulting in the federal government consisting of 2 Flemish parties and 3 Francophone Belgian parties.

Another case of heterogeneity between Flanders and Francophone Belgium with respect to composition of the federal government coalition is that from 1999 onwards the share of the total

[47] See Levitt (1997) for the only previous study we are aware of that includes region-time dummies into a regression specification where the actual unit of observation is below the regional level.
[48] While increasing the risk of saturating our model, given that we only have 215 data points at our disposal.
[49] In the entire Belgian history, party strength has differed between Flanders and Francophone Belgium, with Christian-democrats collecting more votes in Flanders and socialists collecting more votes in Francophone Belgium. In recent decades, an additional major difference has been the far larger fragmentation of the party landscape in Flanders than in Francophone Belgium, mainly due to the varying success of rightwing and/or independentist protest parties in Flanders.
[50] Although it seems hard to see an immediate *positive relationship between transfers and such legislature-specific events*.

Francophone Belgian vote that was represented in the federal government has been considerably larger than the Flemish vote share represented in the federal government. This was because since 1999 Francophone Belgian governing parties have been far larger (in terms of Francophone Belgian vote share) than Flemish governing parties (in terms of Flemish vote share). During the 2010-2014 legislature the 3 Flemish governing parties were not even supported by half of the –valid- Flemish vote cast[51].

As a final illustration of the potential usefulness of adding an interaction of the legislature dummies with the FL dummy, graph 2 above shows the divergence of changes in government popularity between Flanders and Francophone Belgium over our sample period. In general, graph 2 illustrates the larger size of the shocks to the "party landscape" in Flanders than in Francophone Belgium over our sample period. In particular, one cause of the more heavy loss of Flemish government parties in 2007 and 2010 was that they had repeatedly failed to implement measures perceived as leading towards more autonomy of the Flemish region. In contrast, the general Francophone Belgian perception was that Francophone Belgian governing parties had successfully thwarted those measures. Resentment of Flemish voters towards Francophone Belgium –including towards the fiscal transfers implicit in the federal budget from Flanders to Francophone Belgium- has arguably increased considerably over our sample period, as measured by the vote share of Flemish independentist and protest parties[52].

Table 2bis shows the regression output. Again, column (2) presents an interesting result as such from the perspective of the existing literature on distributive politics. In contrast to column (2) in table 2 above, we now find that in Belgium taken as a whole an increase in transfers *is* associated with an increase in government popularity. More in particular, coalition parties' joint vote share *increases* with 0.5%point for every *increase* of per capita transfers of 100 euros. This result is more in line with the existing literature, in contrast to our finding in column (2) of table 2 above.

Column (3) in table 2bis shows the same sign for the coefficients of our 2 variables of interest as column (3) in table 2: a positive sign for the non-interacted transfers variable and a negative sign for the interacted transfers variable. But the significance switches: now the coefficient of the non-interacted coefficient of interest is significant while the coefficient of the interacted coefficient of interest is insignificant[53]. Also the joint size of our 2 coefficients of interest is considerably smaller when adding the interacted legislature dummies[54]. Overall we now obtain regression results which are more in line with the existing literature: the government's popularity is positively associated with transfers –increasing with 0.5%point of the vote share for every increase in transfers per capita of

[51] The average vote share obtained by the governing coalition at the start of a legislature over our sample period is 44.2%. The average Flemish vote share obtained by the governing coalition is 36.9%, while the average Francophone Belgian vote share obtained by the governing coalition is 51.8%. (Because we measure the average vote share obtained by the governing coalition as *the share in total eligible voters, rather than in total valid votes cast*, it is well possible that this share is below 50%.)

[52] While Francophone voters seem rather to show disagreement with the political system by not casting their vote or by casting a blank or an invalid vote.

[53] Also, several of the coefficients of the -interacted and non-interacted- legislature dummies –not shown- are significant in table 2bis, similarly to the high significance of most of the –non-interacted- legislature dummies –not shown- in table 2.

[54] The joint size of our 2 coefficients of interest would be somewhat larger if we had not measured the government's vote share in relation to total *eligible* votes but to total votes *validly cast*.
Also the size and significance of the coefficients of our control variables decreases.

100 euros-, *both in Francophone Belgium and in Flanders*[55]. This seems less so in Flanders, but the difference between Flanders and Francophone Belgium is insignificant[56].

Table 2bis: FD regression of the government's vote share on transfers, with the interaction of the legislature dummies with the FL dummy added as extra controls

	(1) D.govt vote	(2) D.govt vote	(3) D.govt vote
D.over 60		-1.129* (0.643)	-1.089* (0.643)
D.unemployed		0.561 (0.607)	0.629 (0.600)
D.under 18		0.00680 (0.806)	-0.0270 (0.796)
D.gross income		0.219*** (0.0793)	0.214*** (0.0789)
D.ministers		-0.338 (0.315)	-0.357 (0.304)
D.transfers	**0.204**** **(0.0928)**	**0.488***** **(0.0993)**	**0.505***** **(0.114)**
D.transfers*FL			**-0.174** **(0.345)**
N	215	215	215

Robust standard errors clustered at the district level in parentheses; legislature dummies as well as legislature*FL dummies included.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

[55] Similarly to table 2, replacing the FL dummy with a "below mean" dummy, a "below median" dummy, or a continuous "gross income" variable equally results in smaller coefficients and lower significance also when adding legislature dummies interacted with resp. the a "below mean" dummy, the "below median" dummy, or the continuous "gross income" variable.

[56] A criticism of our approach in table 2bis could be that once we interact one variable with the FL dummy, we should interact *all* variables with the FL dummy. However, interacting all variables with the FL dummy does not considerably affect our coefficients of interest throughout this paper.
Moreover a split sample approach produces very similar results, in spite of more or less halving our number of observations. When running the regression behind column (3) for Flemish districts only, the coefficient on transfers is positive but small and insignificant, while when running the regression behind column (3) for Francophone districts only, the coefficient on transfers is positive, larger and very significant (p value of 0.000). The split sample approach also produces similar IV regression results (see below), but evidently the reduced number of observations poses an even bigger handicap to an IV regression than to a simple FD regression. The split sample approach again produces similar results when regressing our dependent variable *directly* on our IV (again see below).

5.2.Instrumental variables (IV) regression results

Of course transfers may be endogenous to popularity of the government, as well as to other time variant factors which we would have failed to include as control variables[57]. In particular we could think of reverse causality between government popularity and transfers. E.g. the federal governments over our sample period included both the Francophone Belgian and Flemish socialist parties[58], which are known to be in favour of an expansion of the "welfare state". Hence transfers may have increased (decreased) whenever governing parties increased (decreased) their vote share, as the latter may have meant an increase (decrease) in the socialist vote[59], and hence an increase (decrease) in socialist intra-coalition power. However, if the latter causality chain held true, we would expect the coefficient of our endogenous variable of interest to be *positive*, while in table 2 its sign is negative.

But we could also think of examples of reverse causality implying a *negative* relationship running from government popularity to transfers. E.g. with the vote losses of *previous* federal government parties in mind, current federal government parties may increase transfers as an attempt to avoid or limit their vote loss during the next federal election[60]. Furthermore, current federal government parties may –correctly- *expect* vote losses in certain districts during the *next* elections, and therefore increase transfers to these districts. Also, Flemish parties that became part of the federal government over our sample period may have been *less pro-transfers in the first place* compared to Francophone Belgian parties that became part of the federal government over our sample period[61]. For this reason, any increase in the vote share of Flemish government parties may have been associated with a decrease in transfers to Flemish districts[62].

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[57] It should be noted that the formula-based nature of our transfers variable as such already mitigates its endogeneity, as formula-based transfers may be assumed to be less easily targetable to particular geographical areas. Virtually the entire distributive politics literature is about discretionary transfers, rather than formula-based transfers.
Another mitigation of endogeneity of our independent variable of interest with respect to government popularity is that it largely consists of social security contributions and expenditures. The latter may be labelled entitlements, as they are hard to scale back after approval, and even could be considered "to start leading a life of their own". Moreover, in Belgium, as in several other countries, political parties have to a large extent ceded control over the social security system to labour unions and employers' organisations.

[58] Exception made for the 2007-10 coalition, which excluded the Flemish socialists.

[59] Over our entire sample period, an increase (decrease) in the *joint* vote share of the governing parties implied an increase (decrease) in the vote share of the governing parties *taken separately*. The only exceptions are the following: decrease in the vote share of both Green parties in 2003; increase in the vote share of the Francophone Belgian liberals in 2007; increase in the vote share of the Francophone Belgian socialists in 2010; decrease in the vote share of the Francophone Belgian socialists in 2014.

[60] Although the current federal government parties may precisely be those parties that *benefited* from the losses of the previous government parties, due to which the current federal government may *not* be worried so much about its popularity in districts in which the previous federal government suffered a vote loss.

[61] In Belgium, it is rather widely accepted that Francophone Belgian parties are more pro-government and more pro-transfers (both in terms of high expenditures and high taxes) than Flemish parties, even when comparing parties of the same "family". E.g. the Francophone Belgian Christian democrats are believed to be more pro-government and more pro-transfers than the Flemish Christian democrats.

[62] However, the formula-based nature of our transfers variable renders this reasoning unlikely, as this nature seems to make it rather hard to increase or cut transfers to one of the 2 main language communities only, though there exist some examples to the contrary, as given above. Another problem with this reasoning is that the vote share of Flemish government parties *decreased* at the end of most of the legislatures comprised by our sample period.

To solve any potential endogeneity problems, we resort to an IV approach. We propose 2 different IVs for transfers, thereby hoping to reduce the chance that none of our IVs is fully exogenous to our dependent variable, or to other time variant factors correlated with transfers which we would have failed to include as control variables. Both IVs proposed are *subsets* of overall transfers considered:

1) Joint early retirement due to downsizing 2007-11: The upper 2 curves in graph 3 show retirement benefits received per capita in Flanders resp. in Francophone Belgium due to joint early retirement following the downsizing of a firm. Belgian law foresees the possibility of granting retirement benefits at a younger age than the statutory retirement age in a number of circumstances, among which the downsizing (or closure) of a firm. Such downsizing (or closure) can be argued to be exogenous to popularity of the then government, as well as to other time variant factors correlated with transfers which we would have failed to include as control variables[63]. The Ministry of Employment has started collecting data per district with respect to joint early retirement due to downsizing only from 2007 onwards[64]. Graph 3 shows that –at least since 2007- Flanders has benefited relatively more from this early retirement possibility than Francophone Belgium, perhaps because the private sector accounts for a larger share of the economy in Flanders than in Francophone Belgium. Graph 3 also makes clear that benefits from joint early retirement due to downsizing make up only a small fraction of total transfers (as graph 3 is expressed in euros per capita while graph 1 is expressed in 100 euros per capita).
2) Temporary unemployment due to the 2009 economic crisis 2009-11: The lower 2 curves in graph 3 show unemployment benefits received per capita in Flanders and in Francophone Belgium due to temporary unemployment caused by the 2009 economic crisis. Because of the 2009 economic crisis, Belgian law –similar to measures taken in other EU countries- has offered employers the possibility to postpone laying off redundant workers and instead to grant them government funded temporary unemployment benefits. Such temporary unemployment can be argued to be exogenous to popularity of the then government, as well as to other time variant factors correlated with transfers which we would have failed to include as control variables, as arguably the 2009 economic crisis was a worldwide phenomenon[65]. Graph 3 shows that Flanders benefited relatively more also from this early

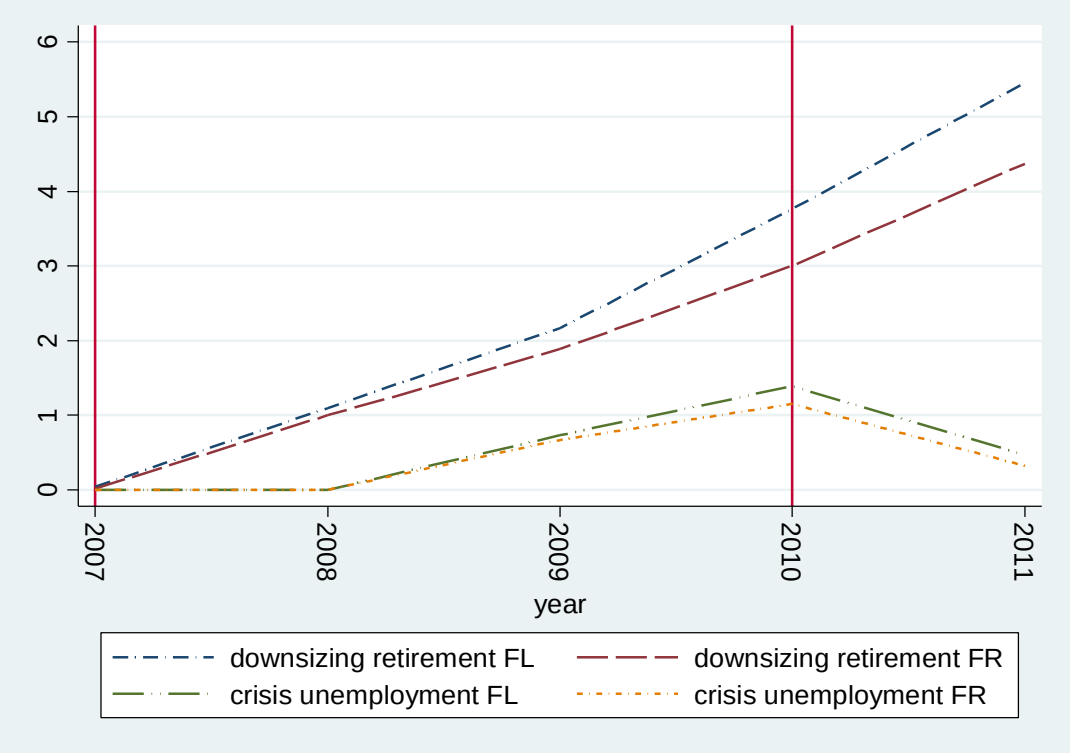
[63] A criticism of the use of the early retirement benefits due to downsizing as an IV could be that an increase in vote share –and the consequent coming to power- of particular –e.g. business unfriendly- parties could encourage firms to downsize. Additionally, certain –e.g. workers friendly- parties may be more lenient than other parties in granting early retirement –both in terms of eligibility and in terms of the financial amounts concerned- on the occasion of a firm's downsizing. In Belgium, the early retirement age on the occasion of a firm's downsizing is negotiated with the federal government on a case by case basis. Therefore this age varies from firm to firm. There are anecdotes that some ministers have become personally involved in the settlement of closures occurring in their electoral district.

[64] This is why the related curves in graph 3 show a continuous increase: the joint early retirement benefits that were granted before 2007 are not shown but some of them may have expired since 2007.

[65] A criticism of the use of temporary unemployment benefits due to the economic crisis as an IV could be that an increase in vote share –and the consequent coming to power- of particular –e.g. worker friendly- parties could increase the probability of a temporary unemployment benefits scheme being established, as well as of the related benefit amounts granted being more generous. Indeed, the then federal government coalition expanded the decades' old Belgian temporary unemployment benefits scheme in 2009 on the occasion of the then economic crisis, to enable not only blue-collar workers but also white-collar workers to benefit from it. However, arguably the then government coalition was more or less as worker friendly as the previous coalition, judged by its party political composition.

retirement possibility than Francophone Belgium, perhaps once again because the private sector accounts for a larger share of the economy in Flanders than in Francophone Belgium. Graph 3 also makes clear that also benefits from temporary unemployment make up only a small fraction of total transfers.

Graph 3: Joint early retirement benefits due to downsizing 2007-11 and temporary unemployment benefits due to the 2009 economic crisis 2009-11 (in real euros of 2011 per capita)



Note: bars indicate federal election years

Source: Federal Ministry of Employment

Table 3 shows our IV regression results. Columns (1) to (4) show the results when instrumenting transfers with benefits due to early retirement following downsizing, in columns (1) and (2) without the interaction of our transfers variable with the FL dummy, and in columns (3) and (4) with the interaction of our transfers variable with the FL dummy[66]. The associations between transfers in general and transfers to Flemish districts in particular on the one hand and the government's vote share on the other hand are broadly similar in sign and significance to the associations in columns (2) and (3) of table 2. However, their size is considerably larger than their size in table 2, as it generally is considerably larger in all other IV regressions below. This may be due to the fact that an increase of 100 euros in our instruments over a legislature is unrealistically large, as opposed to an increase of 100 euros in our endogenous net transfers variable of interest. The average within standard deviation is 239 euros per capita for transfers in general for a Flemish district but it is only 3 euros for temporary unemployment benefits per capita for a Flemish district. (see also graph 3)

[66] Regression results in columns (1) to (4) are similar when using the *number* of beneficiaries rather than the *amount* of benefits due to early retirement following downsizing as an IV.

Table 3: IV regression of the government's vote share difference on difference in transfers

	IV: D.downsizing retirement benefits				IV: D.crisis unemployment benefits			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote
D.over 60	-9.522	-3.856	6.198	1.466	-4.248**	-7.268***	-4.343*	-1.368
	(13.01)	(4.223)	(54.04)	(2.271)	(1.784)	(2.225)	(2.536)	(2.398)
D.unemployed	-0.852	-1.880	24.72	7.215	0.707	-4.258	6.220***	10.69**
	(3.872)	(3.809)	(37.42)	(5.772)	(0.910)	(3.867)	(1.739)	(4.729)
D.under 18	-7.886	-3.940	19.02	0.629	-4.416**	-6.509**	-0.0925	-0.861
	(8.738)	(4.108)	(50.30)	(2.804)	(1.778)	(3.144)	(2.854)	(3.264)
D.gross income	1.549	-1.355	-6.155	-1.239	0.0227	-0.738	-0.785	0.368
	(3.814)	(1.003)	(18.61)	(0.960)	(0.524)	(0.512)	(0.510)	(0.615)
D.ministers	-0.990	0.157	-2.926	0.706	-0.240	0.261	-1.358	1.136
	(2.124)	(1.528)	(6.630)	(1.733)	(0.675)	(1.663)	(1.131)	(1.891)
D.transfers	**3.663**	**-2.128**	**-6.365**	**-2.019**	**-0.143**	**-0.767**	**0.274**	**1.295**
	(9.448)	**(1.895)**	**(38.66)**	**(2.018)**	**(1.326)**	**(0.978)**	**(1.143)**	**(1.035)**
D.transfers*FL			**-24.51**	**-4.302**			**-6.490*** **	**-7.881*** **
			(28.51)	**(3.068)**			**(0.831)**	**(1.309)**
L.D.govt vote		-0.0836		0.348***		-0.432***		0.0348
		(0.287)		(0.123)		(0.160)		(0.163)
N	215	129	215	129	215	129	215	129
Hansen J (p value)	-	0.18	-	0.04	-	0.63	-	0.22
F-test of joint significance of IVs in 1st stage (p value)	0.41	0.08	0.37	0.15	0.00	0.00	0.00	0.00
Number of IVs	1	3	2	4	1	3	2	4

Robust standard errors clustered at the district level in parentheses; legislature dummies included; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Columns (1) and (2) confirm the absence of any association between transfers in general and government popularity. The difference between columns (1) and (2) is that column (2) adds the lagged dependent variable (LDV) as a regressor. We instrument the LDV with the 2nd and 3rd lag of the dependent variable expressed in levels.

In column (3) of table 3 the coefficient on our interacted transfers variable turns insignificant compared to column (3) of table 2, and additionally the F-test of joint significance points at a relevance of our IV that is problematic. However, when we add the LDV as a regressor, as done in column (4), our coefficient of interest almost turns significant again (p value of 0.16). A disadvantage of including the LDV as a regressor is that it makes us lose 2 more legislatures of observations. This is because we need to instrument the LDV -as said by making use of the 2nd and 3rd lag of the dependent variable expressed in levels-, which reduces our number of legislatures to a mere 3, and our number of observations to a mere 129. This is because inclusion of the LDV additionally leads to loss of the observations concerning the 1995-99 legislature.

Columns (5) to (8) shows the IV regression results when using benefits due to temporary unemployment following the 2009 economic crisis as an IV, in columns (5) and (6) without the interaction of our transfers variable with the FL dummy, and in columns (7) and (8) with the interaction of our transfers variable with the FL dummy[67]. Once again, the associations between transfers on the one hand and the government's vote share on the other hand are broadly similar in sign, size and significance to the associations in columns (2) and (3) of table 2. Again, columns (5) and (6) confirm the absence of any association between transfers in general and government popularity.

The difference between the regressions using early retirement due to downsizing as an IV and the regressions using benefits due to temporary unemployment following the 2009 economic crisis as an IV is that in the latter regressions the coefficient on the interacted transfers variable are more significant (columns (7) and (8)), similar to column (3) in table 2. Moreover, in column (8) we can additionally conduct the Hansen J test, as we now have available one more excluded instrument than instrumented variables, thanks to instrumenting the LDV with the 2nd and 3rd lag of the dependent variable expressed in levels. The Hansen J test shows us that we cannot exclude validity of the IV. Moreover, the F-test of joint significance shows that our IV is relevant. Therefore we can now claim the association between transfers to a Flemish district and government popularity to consist of a *causal* effect. Thus an increase in transfers to Flemish voters makes the latter vote *less* for government parties rather than more. This result could be interpreted as supportive of our hypothesis that Flemish parties have less of an incentive to run a federal deficit –conducive to the increase of transfers- than Francophone Belgian parties. Flemish voters may be aware that an increase in transfers to them may come at a high cost, keeping in mind 1) the track record of fiscal indiscipline of the Belgian federal government, as well as 2) the formula-based –i.e. Belgium-wide- nature of the transfers considered.

Again, with respect to our IV regressions, one could argue that a lower vote share obtained by the governing parties is caused by a district's transfers being below the mean (or below the median),

[67] Regression results in columns (5) to (8) are similar when using the *number* of beneficiaries rather than the *amount* of benefits due to temporary unemployment following the 2009 economic crisis as an IV.

rather than by a district being situated in Flanders. I.e. in those few Francophone Belgian districts that are characterised by transfers that are below the mean (or below the median), an increase in transfers could well cause the government's vote share to decrease as much as in Flanders, and in those few Flemish districts that are characterised by transfers that are above the mean (or above the median), an increase in transfers could well cause the government's vote share to remain as stable as in Francophone Belgium.

However, when we replace the FL dummy with a dummy "below mean" (or with a dummy "below median") taking the value of 1 in all districts –Flemish or Francophone Belgian- that are characterised by transfers that are below the mean (or below the median), the coefficients of interest in table 3 become smaller and less significant, often even insignificant, similarly to table 2[68]. This suggests that –while being characterised by transfers that are below the mean or the median may cause a district to worry about an increase in transfers- even Flemish districts with transfers *above* the mean (or above the "median") are –rightly or wrongly- more worried about transfers than Francophone Belgian districts, and that even Francophone Belgian districts with transfers *below* the mean (or below the median) are –rightly or wrongly- less worried about transfers than Flemish districts[69].

Regression results in table 3 broadly remain unchanged when including the 2004 and 2009 regional election results into our dependent variable. These results are shown in annex 2. In this annex we take into account the results of the 2004 and 2009 regional elections because considering federal legislatures as time periods rather than individual years goes with the disadvantage of losing a lot of observations. A way to increase our number of time periods available is to take into account the federal government parties' vote share during *non-concurrent regional elections*. Indeed, regional elections in Belgium may well have been a test of the popularity of the *federal* government coalition as well[70].

All in all, our IV regression results of table 3 confirm our finding of a negative association between transfers to Flemish districts and popularity of Flemish government parties in column (3) of table 2. The results using temporary unemployment benefits additionally show a negative causal effect of transfers to Flanders on Flemish governing parties' vote share.

However, adding the interaction of the legislature dummies with the FL dummy as extra control variables -as done in table 3bis- again changes our regression outputs considerably. Columns (1), (2), (5) and (6) of table 1bis show that the significantly positive association between transfers in general and government popularity as found in column (2) of table 2bis disappears. Additionally, as a result of the specifications behind columns (3), (4), (7) and (8), hardly any of our 2 coefficients of interest is significant anymore. Columns (4) and (8) even show an unexpected positive sign for the interacted variable (but it should be added that these columns show the results of a regression merely using 129 observations due to the inclusion of an LDV). Also the F-test now points at one or more weak IVs

[68] The association also becomes smaller and less significant when we replace the FL dummy with the continuous "gross income" variable.

[69] Replacing the FL dummy with a "below mean" (or "below median") dummy or with the continuous "gross income" variable equally results in smaller coefficients and lower significance when adding legislature dummies interacted with the FL dummy (see below).

[70] Adding the election results of the 2004 and 2009 regional elections equally results in smaller coefficients and lower significance when adding legislature dummies interacted with the FL dummy (see below).

Table 3bis: IV regression of the government's vote share difference on difference in transfers, with the interaction of the legislature dummies with the FL dummy added as extra controls

	IV: D.downsizing retirement benefits				IV:D.crisis unemployment benefits			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote
D.over 60	-6.774	-1.413	-1.951	-2.124	-0.697	-0.756	0.326	-1.159
	(9.351)	(1.470)	(1.707)	(2.392)	(0.735)	(1.043)	(2.055)	(1.290)
D.unemployed	-2.230	3.111	0.916	1.565	0.774	0.143	2.328	-0.231
	(4.897)	(2.135)	(1.632)	(3.167)	(0.618)	(1.854)	(2.288)	(1.984)
D.under 18	-3.146	0.0798	-1.334	0.149	0.248	0.626	-0.394	0.529
	(5.095)	(1.876)	(1.058)	(2.852)	(0.853)	(1.611)	(1.206)	(2.149)
D.gross income	2.763	1.090	0.791	1.119	0.0241	-0.00379	-0.160	0.144
	(4.276)	(0.730)	(0.496)	(0.928)	(0.196)	(0.188)	(0.467)	(0.222)
D.ministers	-1.239	-1.416*	-0.862	-2.585	-0.269	-0.000231	-0.647	-0.863
	(1.793)	(0.821)	(0.566)	(1.714)	(0.290)	(0.940)	(0.587)	(1.399)
D.transfers	**6.651**	**2.067**	**2.335****	**1.756**	**0.0166**	**0.202**	**0.206**	**0.255**
	(10.25)	**(1.429)**	**(0.994)**	**(1.686)**	**(0.417)**	**(0.292)**	**(0.462)**	**(0.380)**
D.transfers*FL			**-2.741**	**3.645**			**-3.773**	**1.910**
			(3.449)	**(4.035)**			**(4.536)**	**(2.347)**
L.D.govt vote		8.145**		8.909*		0.00148		1.559
		(4.110)		(5.111)		(2.589)		(2.904)
N	215	129	215	129	215	129	215	129
Hansen J (p value)	-	0.31	-	0.91	-	0.06	-	0.05
F-test of joint significance of IVs in 1st stage (p value)	0.56	0.33	0.18	0.16	0.00	0.59	0.29	0.60
Number of IVs	1	.3	2	4	1	3	2	4

Robust standard errors clustered at the district level in parentheses; legislature dummies as well as legislature*FL dummies included; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

in most specifications[71].

5.3. *Direct* FD regression of the government's vote share on our IVs

Because our 2 IVs are simply *subsets* of our overall variables of interest, we would expect the coefficients on our IVs (as opposed to most other IVs) to be significant in a simple *direct* FD regression of the dependent variable (in our case the governing coalition's vote share) on our IVs. The latter regression can be considered as an alternative to our IV regression for which we presented the results in table 3 above[72]. Table 4 presents the results of *directly* regressing the government's popularity on our 2 IVs –transfers ascribed to resp. the downsizing of firms and the impact of the 2009 worldwide economic crisis on Belgium- consecutively.

Table 4: *Direct* FD regression of the government's vote share on our IVs

	(1) D.govt vote	(2) D.govt vote	(3) D.govt vote	(4) D.govt vote
D.over 60	-4.363*** (1.168)	-3.654*** (1.078)	-4.433*** (1.085)	-3.686*** (0.971)
D.unemployed	0.610 (0.765)	1.465** (0.645)	0.647 (0.763)	1.238* (0.682)
D.under 18	-4.383** (1.929)	-3.443* (1.766)	-4.521** (1.758)	-3.282** (1.533)
D.gross income	0.0785 (0.110)	0.0759 (0.0991)	0.0803 (0.109)	0.160* (0.0839)
D.ministers	-0.253 (0.660)	-0.116 (0.546)	-0.276 (0.688)	-0.333 (0.539)
D.downsizing retirement benefits	**-11.78** **(26.36)**	**90.62***** **(28.06)**		
D.downsizing retirement benefits*FL		**-142.0***** **(20.62)**		
D.crisis unemployment benefits			**-17.77** **(171.4)**	**520.7***** **(176.2)**
D.crisis unemployment benefits*FL				**-1114.2***** **(137.0)**
N	215	215	215	215

Robust standard errors clustered at the district level in parentheses; legislature dummies included.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

[71] Similarly, when replacing net transfers with its 3 constitutive *components* –social transfers, social security contributions, and income tax payments- as the dependent variable both in a simple FD and in an IV regression, we find a significantly negative association between transfers to Flanders and government popularity, while this effect disappears once we include legislature dummies interacted with the FL dummy.

[72] A problem with respect to our first instrument –early retirement benefits due to downsizing- could be that – as graph 3 implies- its value is zero for most of our observations (as the Ministry of Employment only started collecting data for our first instruments from 2007 onwards). This problem evidently does not apply to our 2nd instrument.

The direct regressions on transfers confirm our results obtained in table 3: no effect of transfers in general and a significantly smaller –and even negative- effect of transfers to Flanders separately. Moreover also the coefficients of the non-interacted transfers variable now become significant (with the expected sign), implying a positive effect of transfers to Francophone Belgium on government popularity. However, while the coefficients of interest in table 4 are much larger, the typical effect is of the same order of magnitude as the typical association of the simple FD regression in table 2 above. We calculate the typical effect by means of example for the interacted variable of interest in column (4). As the average within standard deviation of temporary unemployment benefits per Flemish district over our 6 legislatures is only 0.3 euros per capita, the typical variation in the difference in government vote share between a Francophone and a Flemish district due to variations in temporary unemployment benefits – (a bit unrealistically) expressed in 100 euros per capita- over time equals about -3.6%points (-1114.2%points times 0.003), with a p value of 0.000 (compared to -3.7%points in table 2).

Adding the interaction of the legislature dummies with the FL dummy as extra control variables -as done in table 4bis- weakens the evidence provided by our regression outputs in favour of our hypothesis, but less so than in the IV analysis shown in table 3bis. Compared to table 4, the specifications in table 4bis broadly show the same sign for the coefficients of our 2 variables of interest. But compared to columns (2) and (4) in table 4, the coefficients of the non-interacted variable of interest are no longer significant, and in column (4) also the coefficient of the interacted variable of interest fails to be significant with a p value of 0.15.

However, the fact that both types of events behind our IVs may *directly* impact our dependent variable government popularity –as confirmed in tables 4 and 4bis- may precisely constitute a criticism of our IV strategy. Perhaps voters –rightly or wrongly- *ascribed* the downsizing of firms and/or the size of the impact of the 2009 worldwide economic crisis on Belgium to the federal government in office at those times[73]. It could be voters' *increased disappointment* with a government held responsible for the investors climate and/or the economic cycle[74] -or simply the possibly *changed perception of interests* of the newly retired and/or the newly unemployed- rather than the –related- *increase* in transfers that explains the decreased government popularity[75].

[73] Otherwise stated: an assumption behind the 2 transfers subsets that constitute our IVs is that voters do *not* blame the then government parties for them.

[74] Notwithstanding the fact that we control for the share of unemployed.
Such disappointment could well be shared by voters who did *not* lose their job, as these may fear that they will be "next in line".

[75] Although the latter of the 2 explanations seems somewhat improbable as the interests of both workers and beneficiaries of retirement and unemployment benefits seem to be best defended by socialist and Christian democrat parties, which were part of the federal government coalition over most of our sample period.

Table 4bis: *Direct* FD regression of the government's vote share on our IVs, with the interaction of the legislature dummies with the FL dummy added as extra controls

	(1) D.govt vote	(2) D.govt vote	(3) D.govt vote	(4) D.govt vote
D.over 60	-0.589	-0.685	-0.683	-0.756
	(0.702)	(0.705)	(0.693)	(0.700)
D.unemployed	0.720	0.885	0.782	0.804
	(0.642)	(0.646)	(0.633)	(0.634)
D.under 18	0.440	0.414	0.254	0.193
	(0.931)	(0.929)	(0.880)	(0.890)
D.gross income	0.0143	0.00566	0.0173	0.0240
	(0.0784)	(0.0772)	(0.0765)	(0.0779)
D.ministers	-0.248	-0.183	-0.266	-0.281
	(0.303)	(0.313)	(0.306)	(0.308)
D.downsizing retirement benefits	**-1.397**	**1.971**		
	(1.148)	**(1.514)**		
D.downsizing retirement benefits*FL		**-5.332*** **		
		(1.860)		
D.crisis unemployment benefits			**0.204**	**7.959**
			(5.399)	**(7.231)**
D.crisis unemployment benefits*FL				**-16.77**
				(11.33)
N	215	215	215	215

Robust standard errors clustered at the district level in parentheses; legislature dummies as well as legislature*FL dummies included.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

5.4.Regression results with "non-system vote share" as the dependent variable

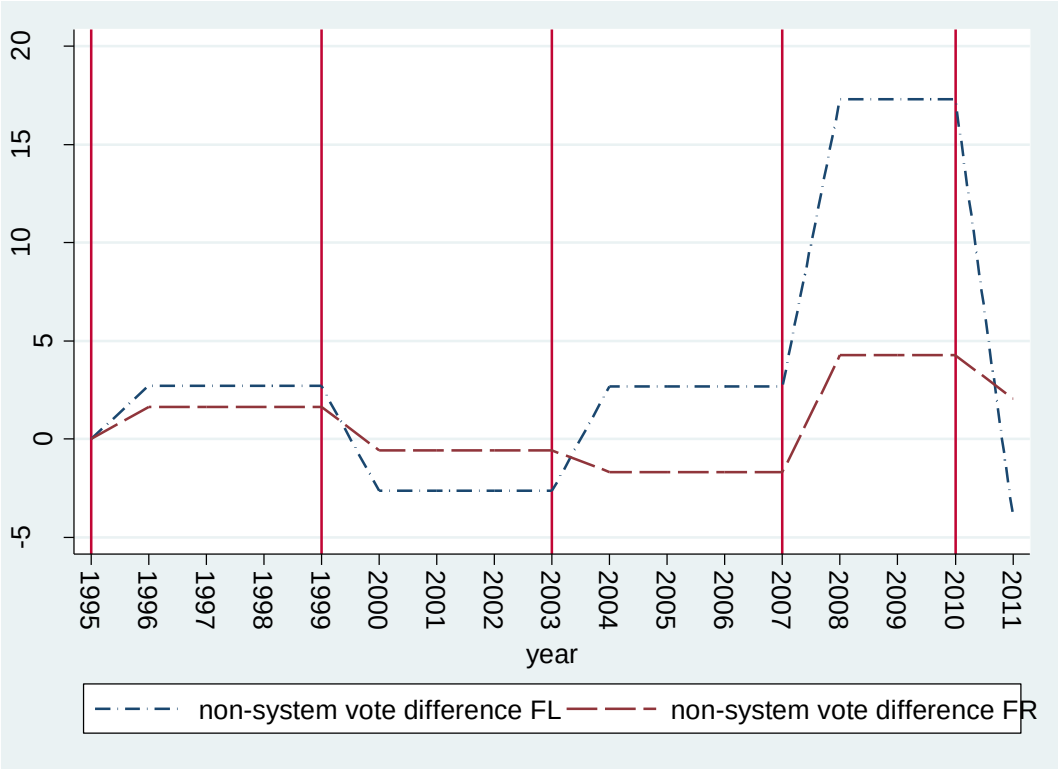
Another way to measure the aversion of voters to –possibly debt increasing- transfers is to regress the share of *non-system votes* on transfers. We define non-system votes as the sum of non-valid votes, "blank votes", votes not cast –despite Belgian law obliging citizens to cast their vote, however without this obligation being enforced-, and votes cast in favour of a party that never participated in a federal government coalition over our sample period[76]. Hence non-system votes are *all* votes *not* cast in favour of both socialist, Christian democrat, liberal and green parties nor in favour of VU[77].

[76] The average non-system vote over our sample period is 32.1%. The average Flemish non-system vote is 38.0%, while the average Francophone Belgian non-system vote is 26.0% . If we exclude the vote share of N-VA –one of the 2 Flemish independentist parties- from the Flemish non-system vote, the Flemish average is 30.6%, i.e. still higher than the Francophone Belgian average. One could argue in favour of excluding the N-VA vote from the non-system vote because N-VA has been part of the governing coalition at the level of the *Flemish Regional government* ever since 2004.

[77] The one federal government the Flemish party VU participated in over our sample period is the 1999-2003 government. During this legislature VU ceased to exist.

Such non-system votes may be a better measure of voters' dislike of transfers –and of debt increases that may follow from it- than votes for the governing coalition. This is because votes for opposition parties that are "system parties", i.e. that *did* govern during at least one legislature over our sample period, may not so much express dislike of transfers *as such*, rather than dislike of the *current distribution* of transfers. Admittedly and surprisingly, there is a very strong –negative- correlation between (difference in) vote share of governing parties and (difference in) non-system vote share: -0.79. But this correlation is considerably weaker for Francophone Belgium (-0.54) than for Flanders (-0.84). I.e. Francophone Belgian voters who are not pleased with the governing coalition much less often cast a non-system vote. Graph 4 shows the evolution of the overall difference in non-system vote share between the next and the previous federal election. Most striking is the surge in the non-system vote in Flanders witnessed during the 2010 federal elections. This surge was to an important extent due to the large increase in the vote share of N-VA, one of the 2 Flemish independentist parties.

Graph 4: Difference in non-system vote share (%points) between federal elections



Note: bars indicate federal election years

Source: Jo Buelens and Kris Deschouwer (VUB); http://www.ibzdgip.fgov.be/result/nl/main.html (Federal Ministry of the Interior); own calculations.

Table 5 shows the regression results when replacing government vote share difference with non-system vote share difference as the dependent variable. Columns (1) and (2) show the results for the simple FD regression, columns (3) to (6) for the IV regression with early retirement benefits due to downsizing as an IV, and columns (7) to (10) for the IV regression with temporary unemployment

Table 5: Regression of non-system vote share difference on difference in transfers

	FD		IV: D.downsizing retirement benefits				IV: D.temporary unemployment benefits			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	D.non-system vote	D.non-system vote	D.non-system vote	D.non-system vote	D.non-system vote	D.non-system vote	D.non-system vote	D.non-system vote	D.non-system vote	D.non-system vote
D.over 60	2.848***	3.038***	14.83	56.54	1.208	-4.632	3.356	6.635***	3.460	0.0773
	(0.795)	(0.716)	(17.90)	(132.0)	(39.83)	(4.310)	(2.062)	(1.826)	(2.699)	(2.352)
D.unemployed	0.424	-0.606	3.964	-1.499	-18.18	-5.879	0.574	7.756**	-5.475***	-7.198
	(0.613)	(0.679)	(5.251)	(38.64)	(26.97)	(5.482)	(0.910)	(3.443)	(1.931)	(4.658)
D.under 18	3.542**	2.807**	11.42	37.69	-11.88	-1.540	3.876**	7.470***	-0.869	1.258
	(1.374)	(1.277)	(12.19)	(90.05)	(36.11)	(4.009)	(1.764)	(2.659)	(2.669)	(3.075)
D.gross income	0.0939	0.203**	-3.373	-17.79	3.301	1.653	-0.0532	0.606	0.833	-0.173
	(0.115)	(0.0879)	(5.194)	(45.89)	(13.66)	(1.442)	(0.603)	(0.528)	(0.528)	(0.646)
D.ministers	0.189	0.433	1.891	10.15	3.568	-2.029	0.261	0.0221	1.488	-1.097
	(0.525)	(0.448)	(2.719)	(24.88)	(5.268)	(2.226)	(0.571)	(1.337)	(1.370)	(1.592)
D.transfers	**0.405***	**0.200**	**-8.240**	**-34.53**	**0.448**	**2.669**	**0.0387**	**0.685**	**-0.419**	**-0.831**
	(0.215)	**(0.141)**	**(12.84)**	**(90.04)**	**(29.02)**	**(2.935)**	**(1.549)**	**(1.065)**	**(1.196)**	**(1.169)**
D.transfers*FL		**1.273*** **			**21.23**	**7.676*** **			**7.123*** **	**7.960*** **
		(0.231)			**(20.33)**	**(2.229)**			**(0.807)**	**(1.233)**
L.D.non-system vote				-3.699		0.252		-0.766***		-0.0264
				(8.614)		(0.192)		(0.183)		(0.260)
N	215	215	215	129	215	129	215	129	215	129
Hansen J statistic (p value)			-	0.95	-	0.94	-	0.02	-	0.79
F-test of joint significance of IVs in 1st stage (p value)			0.42	0.28	0.49	0.41	0.00	0.02	0.00	0.04
Number of IVs			1	3	2	4	1	3	2	4

Robust standard errors clustered at the district level in parentheses; legislature dummies included; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

benefits due to the 2009 economic crisis as an IV. As expected, results are very similar to the results of tables 2 and 3, after taking into account that the expected signs of our variables of interest switch. Indeed, we would expect that more transfers to Flanders lead to more votes for non-system parties. Similarly to table 3, the F-test points at relevant IVs only in the regression specifications using temporary unemployment benefits as an IV.

Once again, adding the interaction of the legislature dummies with the FL dummy as extra control variables weakens the evidence provided by our regression outputs in favour of our hypothesis, but to a lesser extent than shown by the regression results of tables 2bis and 3bis. The regression results in table 5bis generally show a positive sign for the coefficient of the interacted variable of interest and a negative sign for the coefficient of the non-interacted variable of interest, similarly to table 5[78]. The coefficient of the interacted variable of interest is insignificant in every specification, similarly to table 2bis. The coefficient of the non-interacted variable of interest is significantly negative -similarly to table 2bis- only in columns (2) and (10), but just fails to be significantly negative in several other columns. However, even more than in table 5, the F-test points at one or more weak IVs in several IV regression specifications.

[78] The exception is column (2).

Table 5bis: Regression of non-system vote share difference on difference in transfers, with the interaction of the legislature dummies with the FL dummy added as extra controls

	FD		IV: D.downsizing retirement benefits				IV: crisis unemployment benefits			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	D.non-system vote	D.non-system vote	D.non-system vote	D.non-system vote	D.non-system vote	D.non-system vote	D.non-system vote	D.non-system vote	D.non-system vote	D.non-system vote
D.over 60	0.622*	0.632	10.88	1.695	-0.0625	1.492	0.641	0.442	-0.153	-0.114
	(0.355)	(0.376)	(16.97)	(1.825)	(2.650)	(2.269)	(0.590)	(0.644)	(1.690)	(1.230)
D.unemployed	0.133	0.151	5.206	-3.973	-1.934	-5.607	0.142	-1.735	-1.064	-3.240
	(0.387)	(0.402)	(8.993)	(2.590)	(2.300)	(4.645)	(0.430)	(1.242)	(1.821)	(2.291)
D.under 18	-0.0160	-0.0249	5.715	-0.491	1.602	-0.508	-0.00509	-0.0651	0.494	0.0181
	(0.588)	(0.584)	(8.961)	(1.961)	(2.047)	(2.452)	(0.636)	(0.988)	(0.914)	(1.407)
D.gross income	-0.150**	-0.151**	-4.774	-1.464*	-0.298	-1.703*	-0.158	-0.378*	-0.0156	-0.416*
	(0.0663)	(0.0647)	(7.761)	(0.885)	(0.578)	(0.935)	(0.171)	(0.206)	(0.381)	(0.228)
D.ministers	0.365	0.360	2.003	1.483**	1.148	0.930	0.368	1.087***	0.662	0.303
	(0.247)	(0.248)	(3.166)	(0.711)	(0.778)	(1.907)	(0.232)	(0.390)	(0.480)	(1.040)
D.transfers	**-0.226***	**-0.221***	**-11.43**	**-2.484**	**-1.632**	**-3.124**	**-0.247**	**-0.538**	**-0.395**	**-0.870*****
	(0.123)	**(0.124)**	**(18.62)**	**(1.811)**	**(1.352)**	**(2.169)**	**(0.428)**	**(0.383)**	**(0.401)**	**(0.302)**
D.transfers*FL		**-0.0458**			**6.219**	**2.265**			**2.930**	**2.831**
		(0.228)			**(5.173)**	**(6.484)**			**(3.735)**	**(3.248)**
L.D.non-system vote				-0.154		-0.332		0.212		0.0806
				(0.452)		(0.709)		(0.131)		(0.217)
N	215	215	215	129	215	129	215	129	215	129
Hansen J statistic (p value)			-	0.52	-	0.48	-	0.44	-	0.25
F-test of joint significance of IVs in 1st stage (p value)			0.56	0.29	0.44	0.42	0.01	0.00	0.29	0.54
Number of IVs			1	3	2	4	1	3	2	4

Robust standard errors clustered at the district level in parentheses; legislature dummies as well as legislature*FL dummies included; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

6.Conclusion/summary

As political parties in Belgium are split along Flemish-Francophone linguistic lines, and as Flanders enjoys relatively less federal expenditures and pays relatively more federal taxes than Francophone Belgium, the incentives for Flemish parties to run a budget deficit when governing at the federal level seem smaller than for Francophone parties. As the federal debt is serviced out of federal tax revenues, Flanders bears most of the cost of debt servicing, while possibly having benefited the least from the additional expenditures that had been made possible by a federal budget deficit.

The geographically unevenly spread benefits from Belgian federal budget deficits –and the geographically diverging incentives for federal budget deficits this disparity seems to create- may well explain to some extent the large overall size of deficits and debt in Belgium since the 1970s. Therefore, interregional fiscal transfers resulting from the federal debt may be important not just because of their distributional *consequences*, but even more because they may provide an *explanation* for the large overall size of deficits and debt that have characterised Belgium since the 1970s.

We have tested for these differing federal budget deficit incentives empirically by investigating the effect of an increase in net fiscal transfers to inhabitants of the 22 Flemish districts on the popularity of Flemish parties that govern at the federal level, compared to the effect of an increase in net fiscal transfers to inhabitants the 21 Francophone Belgian districts on the popularity of Francophone parties that govern at the federal level, over the 1995-2011 period. Our net fiscal transfers variable is formula-based and is defined as social transfers received by citizens minus social security contributions and income taxes paid by citizens. We consider our net fiscal transfers variable as an –imperfect- indicator to citizens of their district's contribution to the federal budget balance.

In contrast to the existing distributive politics literature, we have found that an increase in net fiscal transfers to Flemish districts causes Flemish parties governing at the federal level to *lose* votes during the next federal election, while the effect is insignificant for Francophone Belgian parties as well as for Belgium as a whole. This negative effect of net transfers on votes in Flanders is remarkable, all the more so because our net transfers variable consists more of *transfers paid by citizens to the federal government* (social security contributions and income taxes) *than of transfers received by citizens* (social transfers). The negative effect may be suggestive of Flemish voters being aware of the fact that increases in formula-based net transfers to Flanders may go hand in hand with increases in the same net transfers to Francophone Belgium, that increases in these transfers may increase the public debt, and that the public debt is serviced disproportionately with federal taxes collected in Flanders. Our findings seem consistent with our earlier calculations that Flanders bears a far larger share of the tax cost of Belgian budget deficit accumulation than Francophone Belgium.

Could the difference in the effect of transfers on government popularity between Flanders and Francophone Belgium be due to a simple *difference in their preferences* for government spending[79]? This does not seem likely, as the bulk of our transfers variable consists of government *revenues*, not spending. Could the difference in the effect of transfers on government popularity between Flanders

[79] In Belgium it is widely accepted that Francophone voters are more pro public expenditures than Flemish voters.

and Francophone Belgium be due to the considerable difference in their gross incomes per capita[80], and/or in their other demographic-economic characteristics? This does not seem likely either, as we control for gross income per capita[81], as well as for other demographic-economic characteristics.

The negative effect is however smaller and less significant when weighting our net transfers variable for the size of the federal budget deficit. A possible explanation is that for the individual citizen net fiscal transfers received at the district level may be a more visible indicator of the sustainability of federal public finances than the aggregate federal budget balance. Another explanation would be that Flemish voters dislike extra formula-based transfers to Flanders *even if the federal budget would be balanced*, as they may fear that the concomitant extra formula-based transfers to Francophone Belgium would be funded with less federal expenditures to or more taxes raised from Flanders that are *not* included in our independent formula-based net transfers variable.

The Flemish negative effect of transfers received on government popularity even turns insignificant in most specifications when adding *Flanders-specific* legislature fixed effects as control variables, while this addition preserves the insignificantly positive Francophone Belgian as well as Belgium-wide effect in most regressions specifications. Adding *Flanders-specific* legislature fixed effects as control variables may be justified because federal elections in Belgium are held in parallel in Flanders and in Francophone Belgium, without the 2 communities having any media, language or political parties in common.

Therefore, we should conclude from our investigation that although -fiscally speaking- Francophone Belgian parties would have an incentive to run a deficit while the reverse holds for Flemish parties, these incentives are *not* evident from the behaviour of Francophone Belgian nor Flemish voters. Francophone Belgian voters do not seem to particularly reward extra net transfers received with more votes, while Flemish voters do not seem to particularly punish extra net transfers received with less votes. Francophone Belgian voters seem to overestimate the future cost of extra transfers they will bear, while Flemish voters seem to underestimate the future cost of extra transfers they will bear. Alternatively, Francophone Belgian parties may overestimate the rewards -in terms of voters' gratitude- of steering extra transfers to Francophone Belgium, while Flemish parties may correctly estimate the –lack of- punishment –in terms of voters' anger- of steering extra transfers to Flanders.

From the perspective of the existing literature on the impact of transfers on government popularity, the absence of a positive Francophone Belgian and Belgium-wide effect seems more puzzling than the absence of a negative Flemish effect.

[80] Dixit and Londregan (1998) hypothesize that the votes of lower-income groups can more easily be "bought" with transfers.

[81] The difference between the average annual gross income per capita in Flanders and in Francophone Belgium increased from 2123 to 2775 real euros between 1995 and 2011.

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Annex 1: "Arrondissements" (districts) of Belgium

Flemish districts are districts to the north of the Belgian language border, i.e. to the north of the quasi-horizontal line running from west to east through the middle of Belgium. The exception is the Brussels district, which we consider to be a Francophone Belgian district.

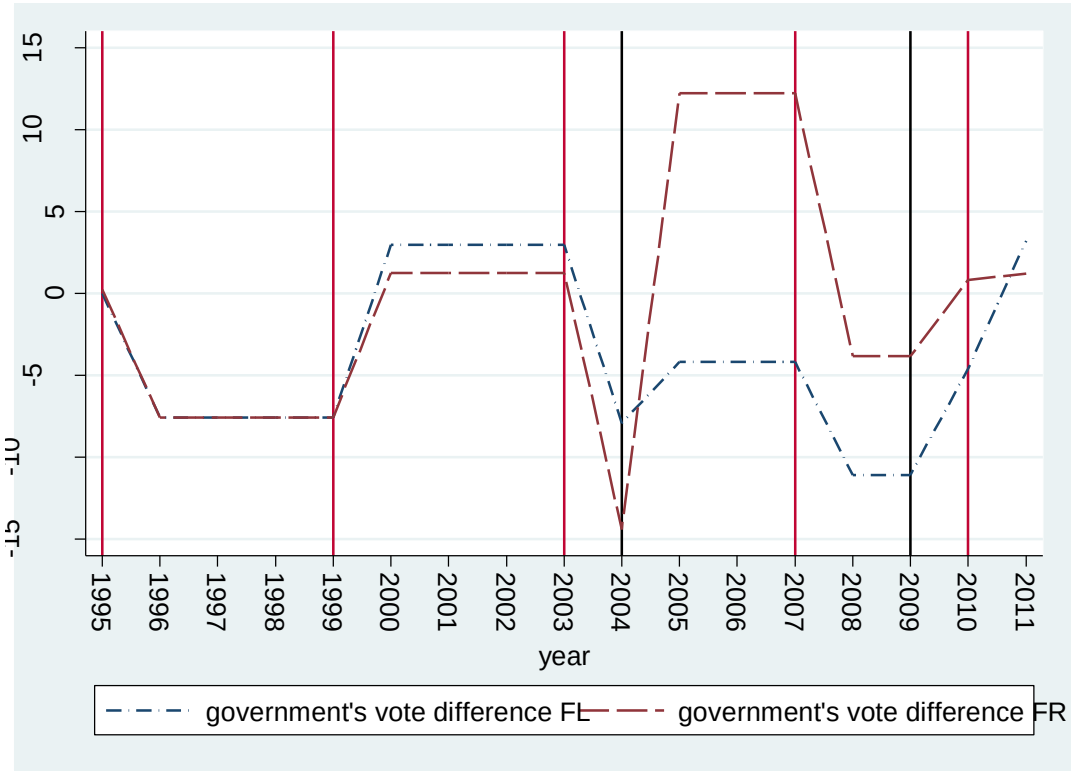
Francophone Belgian districts are districts to the south of the Belgian language border, plus Brussels.

District names are indicated in bold. Names of provinces are indicated in non-bold. Names of districts that are also the names of provincial capitals are in capital letters.

Annex 2: Regression results after including the 2004 and 2009 regional election results into our dependent variable

Considering federal legislatures as time periods rather than individual years goes with the disadvantage of losing a lot of observations. A way to increase our number of time periods available is to take into account the federal government parties' vote share during *non-concurrent regional elections*. Similarly to graph 2 above, graph 5 shows the evolution of our dependent variable "difference in government vote share" over time and between Flanders and Francophone Belgium, but we now include the 2 non-concurrent regional elections that were held over our sample period, i.e. the regional elections of 2004 and 2009, to obtain 2 more "legislatures" compared to graph 2. Indeed, regional elections in Belgium may well have been a test of the popularity of the *federal* government coalition as well[82], and many voters arguably may not bother to base their voting behaviour in regional elections on past regional policy only, but may also take into account *federal* fiscal transfers obtained as well as *federal* fiscal policy in general as criteria for their voting behaviour during regional elections. Hence, thanks to the inclusion of the 2 non-concurrent regional election results, we obtain 2 more "legislatures", i.e. 2003-04 –hence consisting of one year only-, and 2007-09 –hence consisting of 2 years only-, thereby increasing the number of "legislatures" from 6 to 8 (but evidently shortening the duration of 2 original legislatures). As graph 5 –unsurprisingly- shows, this inclusion increases the variation in our dependent variable.

Graph 5: Difference in government's vote share (%points) between federal *or regional* elections



[82] Over our sample period, it also *appeared* that parties governing at the federal level –as well as federal opposition parties- considered regional elections as a test of federal policy, i.a. because over our sample period several federal ministers –as well as several federally elected politicians in general- ran for election during non-concurrent regional elections.

Note: red bars indicate federal election years; black bars indicate regional election years

Source: Jo Buelens and Kris Deschouwer (VUB); http://www.ibzdgip.fgov.be/result/nl/main.html (Federal Ministry of the Interior); own calculations.

Table 6 shows the regression results. Our number of observations increases from 215 to 293. Columns (1) and (2) show the simple FD results. Columns (3) to (6) show the IV regression results with early retirement due to downsizing as an IV. Columns (7) to (10) show the IV regression results with temporary unemployment due to the 2009 crisis as an IV. Results are rather similar to results reported in tables 2 and 3 above with respect to the sign, size and significance of the coefficients of interest. These results may suggest that a considerable number of voters base their voting decision during regional elections also on federal considerations, i.e. on federal transfer policy. These similar results however may be rather unsurprising when taking into account that the 2004 and 2009 regional election outcomes for the then federal government parties were an "announcement" of their vote losses at the then next federal elections of 2007 and 2010 resp., at least for the Flemish parties governing at the federal level. These "announcements" can also be derived from a comparison of graphs 2 and 5[83].

[83] The Flemish government parties' vote loss "shock" of the 2007 elections shown in graph 2 is "absorbed" already to a large extent by the 2004 regional elections in graph 5, with the 2007 elections only accounting for the "remaining" vote loss. In other words, the vote loss of the Flemish governing parties due to the 2007 elections shown in graph 2 can be "spread" over 2 elections in graph 5 (the 2004 regional elections and the 2007 federal elections). Similarly, because the 2009 regional elections already "absorb" part of the vote loss "shock" of the Flemish governing parties incurred during the 2010 federal elections in graph 5, graph 5 shows a smaller vote loss for the Flemish governing parties on account of the 2010 elections than graph 2. Remarkably, an opposite movement occurred for one of the Francophone Belgian governing parties during the 2003-2007 legislature. The Francophone Belgian liberals lost heavily during the 2004 regional elections compared to their result obtained at the 2003 federal elections, an evolution which was inversely related to the sharp vote increase obtained by the Francophone Belgian Green party between the 2003 federal elections and the 2004 regional elections. In contrast, the Francophone liberals won heavily during the 2007 federal elections, *again* compared to their result obtained at the 2003 federal elections. Therefore, including the 2004 regional election results *exacerbates rather than dampens* vote difference shocks for Francophone Belgium.

Table 6: Regression of the government's vote share difference on difference in transfers, now including the 2004 and 2009 regional elections

	FD		IV: D.downsizing retirement benefits				IV: crisis unemployment benefits			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote
D.over 60	-317.8**	-349.6**	-3984.1	-871.2***	-5885.6	-2850.2	-790.2	-855.1***	-4352.6	-1368.9**
	(152.3)	(144.0)	(13245.5)	(309.0)	(16079.3)	(4482.5)	(2334.5)	(288.1)	(19293.1)	(654.6)
D.unemployed	-49.38	20.61	-1768.3	-1303.9***	-1653.6	2685.3	-270.9	-1198.5***	-569.3	-67.35
	(107.3)	(112.1)	(6313.5)	(483.1)	(9159.7)	(5180.3)	(1131.5)	(463.3)	(7094.6)	(796.2)
D.under 18	-442.1**	-389.5**	-2949.8	-1027.4***	-3369.2	-2801.7	-765.3	-997.5***	-2000.4	-1454.4
	(194.4)	(185.3)	(9240.8)	(383.9)	(12379.8)	(4610.0)	(1588.7)	(349.5)	(11730.6)	(962.1)
D.gross income	0.0411	-0.0166	9.113	-0.364	12.20	6.749	1.210	-0.273	7.818	1.660*
	(0.136)	(0.121)	(32.70)	(0.479)	(41.74)	(11.15)	(5.821)	(0.475)	(44.33)	(0.954)
D.ministers	-2.274	-2.812*	-44.96	-0.447	-69.09	-149.6	-7.775	-1.855	-51.96	-42.44**
	(1.678)	(1.556)	(152.4)	(8.160)	(183.0)	(229.0)	(27.11)	(7.859)	(223.1)	(21.17)
D.transfers	**0.0802**	**0.283**	**29.20**	**0.125**	**43.71**	**37.14**	**3.833**	**0.372**	**31.32**	**10.40****
	(0.201)	**(0.232)**	**(105.4)**	**(1.737)**	**(129.0)**	**(59.33)**	**(18.69)**	**(1.694)**	**(151.3)**	**(5.240)**
D.transfers*FL		**-0.903****			**-10.70**	**-52.07**			**-14.58**	**-14.13****
		(0.358)			**(23.95)**	**(75.79)**			**(25.91)**	**(6.681)**
L.D.govt vote				-0.685***		-1.439		-0.598***		-0.764*
				(0.173)		(2.436)		(0.167)		(0.436)
N	293	293	293	207	293	207	293	207	293	207
Hansen J statistic (p value)			-	0.39	-	0.85	-	0.10	-	0.32
F-test of joint significance of IVs in 1st stage (p value)			0.79	0.05	0.93	0.04	0.83	0.05	0.94	0.05
Number of IVs			1	3	2	4	1	3	2	4

Robust standard errors clustered at the district level in parentheses; legislature dummies included; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

But once again, adding the interaction of the legislature dummies with the FL dummy as extra control variables -as done in table 6bis- changes our regression outputs considerably. Similarly to before, most specifications in table 6bis show the same sign for the coefficients of our 2 variables of interest: a positive sign for the non-interacted transfers variable and a negative sign for the interacted transfers variable. But again the significance decreases in most specifications compared to table 6. Also the F-test now points at one or more weak IVs in every IV specification.

Table 6bis: Regression of the government's vote share difference on difference in transfers, including the 2004 and 2009 regional elections, and with the interaction of the legislature dummies with the FL dummy added as extra controls

	FD		**IV: D.downsizing retirement benefits**				**IV: D.temporary unemployment benefits**			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote	D.govt vote
D.over 60	-110.3	-104.6	3654.6	-370.8**	113.1	-213.1	1783.1	-361.4**	-571.7	-450.0
	(104.8)	(102.8)	(16318.7)	(175.6)	(704.0)	(413.5)	(26865.6)	(171.2)	(1672.3)	(288.2)
D.unemployed	-22.24	-9.646	2013.9	-473.7*	570.8	90.98	1001.8	-468.9*	-37.99	-617.3
	(90.18)	(87.84)	(8663.8)	(246.2)	(733.7)	(607.0)	(14296.7)	(241.4)	(1384.7)	(444.9)
D.under 18	0.0447	-7.530	2129.6	-82.43	-411.2	-346.7	1071.0	-80.38	-527.2	-40.65
	(81.44)	(83.18)	(9664.3)	(238.7)	(602.8)	(589.4)	(15365.2)	(231.4)	(752.3)	(286.8)
D.gross income	0.0824	0.0704	-11.50	0.563	-0.325	-0.233	-5.740	0.537	1.640	0.914
	(0.0977)	(0.0984)	(49.72)	(0.375)	(1.745)	(1.440)	(82.22)	(0.357)	(4.879)	(1.083)
D.ministers	-2.380*	-2.532**	48.83	-12.97**	-10.77	-14.81*	23.38	-12.61**	-14.31	-14.48**
	(1.207)	(1.205)	(222.3)	(5.420)	(7.727)	(8.409)	(362.7)	(5.346)	(19.32)	(6.871)
D.transfers	**0.247**	**0.290**	**-36.71**	**2.674***	**3.008**	**3.412***	**-18.34**	**2.580***	**7.229**	**2.975**
	(0.193)	**(0.237)**	**(158.9)**	**(1.559)**	**(3.262)**	**(1.863)**	**(261.7)**	**(1.494)**	**(13.23)**	**(1.839)**
D.transfers*FL		**-0.329**			**-16.36**	**-13.31**			**-8.101**	**3.440**
		(0.346)			**(16.58)**	**(13.54)**			**(21.11)**	**(9.227)**
L.D.govt vote				-0.700***		-0.701***		-0.673***		-0.687***
				(0.122)		(0.212)		(0.117)		(0.163)
N	293	293	293	207	293	207	293	207	293	207
Hansen J statistic (p value)			-	0.14	-	0.82	-	0.40	-	0.68
F-test of joint significance of IVs in 1st stage (p value)			0.82	0.22	0.65	0.50	0.95	0.24	0.95	0.85
Number of IVs			1	3	2	4	1	3	2	4

Robust standard errors clustered at the district level in parentheses; legislature dummies as well as legislature*FL dummies included; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$